

PATIENTS' KNOWLEDGE OF AND SATISFACTION  
WITH THE FEMORAL POPLITEAL BYPASS  
PATIENT EDUCATION PROGRAM

CENTRE FOR NEWFOUNDLAND STUDIES

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MARION E. PRATT









PATIENTS' KNOWLEDGE OF AND SATISFACTION WITH  
THE FEMORAL POPLITEAL BYPASS PATIENT EDUCATION PROGRAM

by  
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## **Abstract**

The purpose of this study was to plan, develop, implement and evaluate a Femoral Popliteal Bypass Patient Education Program. The Program, as well as pre-test, post-test and satisfaction questionnaires were developed. Validation and reliability were established by circulating the Program and measuring instruments to a group of experts for their review and critique. In addition, an initial pilot of the program was conducted involving two patients who were not included in the study. Revisions were made based on comments and problems encountered when piloting the program and measuring instruments.

The setting for this study, St. Clare's Mercy Hospital, and the fact that the independent variable, the Femoral Popliteal Bypass Surgery Patient Education Program, is only applicable to patients having this particular procedure performed, dictated the sample population. The convenience sample was composed of fifteen (15) mentally competent, patients entering St. Clare's Mercy Hospital for elective femoral popliteal bypass surgery. Patients were randomly assigned to an experimental and control group.

Data were obtained by administering a pre- and post-test questionnaire to the experimental and control groups. Both groups were administered the pre-test on admission to the hospital. The experimental group then participated in the

Femoral Popliteal Bypass Patient Education Program, whereas the control group did not. The post-test was administered to both groups prior to discharge from hospital. The satisfaction questionnaire was given to the experimental group only upon discharge. Frequency tables were used to describe differences within the sample population with reference to gender, education, previous hospitalization, smoking habits and exercise patterns. A one-way analysis of variance was the statistical method chosen to determine the differences between the experimental and control group responses on the pre- and post-test questionnaires. The same method was utilized to determine the impact of the variables of age, education, smoking, level of exercise, gender and previous hospitalization had on pre- and post-test results of the sample population. Descriptive statistics were used to describe findings of the satisfaction questionnaire. Analysis of the data as well as the knowledge gained from the literature review and input from the assigned nurse instructor for the program formed the basis for the conclusions. The subsequent recommendations were aimed at enhancing patient education services at St. Clare's Mercy Hospital.

Data analysis indicated two significant areas of patient knowledge gain within the experimental group, namely, preparation for discharge and within the educational grouping of no schooling to grade seven. Data analysis did identify slight knowledge gain for the control group but not at a significant

level. The satisfaction questionnaire responses indicated the experimental group was very pleased with the program and that they perceived it as being very beneficial to them. However, they would like to see more detailed information on nutrition, diet, lifestyle, hereditary factors, and discharge instructions.

This study identified definite benefits in having a well planned and organized patient education program. Further research would be required to determine if participants actually changed their behavior and lifestyle over the longer term.

Recommendations were made based on the findings of the study, literature review and input from the instructor for the program and staff of St. Clare's Mercy Hospital involved with this program. Recommendations include: having nursing staff dedicated to the patient teaching function; having sufficient resources available to implement patient education programs based on patient need; expanding the program to include additional relevant information, and conducting further research into the longer term evaluation of the program's effectiveness.

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## CHAPTER I

### Introduction

Providing high quality health care, which incorporates state of the art technology, requires a continuously increasing flow of financial assistance. Economic restraints, imposed by the Federal and Provincial Governments, is forcing the Health Care System to seek unique, cost-effective methods of delivering acute and long term health care to consumers. One major focus for the future is the prevention of illness. The current emphasis on public health education is creating an awareness of healthier lifestyles. The assumption is that a healthier lifestyle will lead to a reduction in the number of persons requiring health care services.

Hospitals can make an important contribution to the promotion of healthier lifestyles and disease prevention by planning, organizing, implementing and evaluating inpatient and out-patient education programs. The American Hospital Association (1981) recognized the importance of patient education in a policy statement:

The hospital has a responsibility to provide patient education services as an integral part of high quality, cost effective care. Patient education services should enable patients, their families and friends, when appropriate, to make informed decisions about their health, to manage

their illnesses, and to implement follow-up care at home. (p. 1)

Patient education is an active process of information exchange or skill techniques demonstrated with patients, with the aim of producing an observable change in behaviour or attitude (Cahill, McVan & Douglas, 1987).

Rocella (1976), program manager of primary care and community medicine at the University of Michigan Medical School, writes that while more studies are needed: "There is significant evidence that education of patients to understand the nature of their illness and what they can do to help themselves, could reduce the cost of patient care" (p. 223).

Research and experience have identified the following benefits of an organized planned approach to patient education for patients, their families and health care institutions. For patients and their families it can:

1. reduce anxiety;
2. increase their ability to make health/lifestyle decisions; and
3. reduce the number of hospital readmissions.

From the health care institution's perspective, this would encourage:

- a more efficient and effective utilization of resources;
- shorter lengths of patient stay;
- fewer readmissions;

- community support for the institution; and
- greater job satisfaction for health care personnel involved with patient care (Bell & Whiting, 1981, p. 25).

Patient education is an integral part of patient care services; however, it is only recently that hospital administrators have recognized that such education must be a managed function - one that is planned, co-ordinated and evaluated - as are other aspects of treatment (Rocella, 1976).

#### Background to the Study

St. Clare's Mercy Hospital, is a modern accredited 323-bed tertiary care hospital located in St. John's, Newfoundland. The hospital is owned by the Congregation of the Sisters of Mercy and operated by a Board of Governors. It is a teaching hospital, where students in the health care field gain valuable knowledge and experience in their specific area of expertise (eg. medicine, nursing, laboratory technology, x-ray technology, etc.). St. Clare's Mercy Hospital provides inpatient and outpatient health care services to patients and their families from all parts of Newfoundland and Labrador. St. Clare's philosophy and objectives reflect its commitment to patient education. The following specific objectives refer to patient education:

1. To provide comprehensive and high quality care by: ... (d) providing information and education to patients and families regarding their

condition, treatment and prognosis.

3. To operate an efficient, well administered institution by: ... (d) meeting standards set by the Canadian Council of Hospital Accreditation and other appropriate bodies, (e) promoting education and outreach to the community in areas related to health.
4. To promote health related education and research by: ... (b) promoting the development and advancement of health education programs. (St. Clare's Mercy Hospital, Philosophy and Objectives)

Bell and Whiting (1981) define patient education as: "The recording of actual information to patients but it also includes the interpretation and integration of information in such a manner as to bring about attitudinal or behavioral changes which benefit the person's health status" (p. 26).

Patient education is an important component of total patient care at St. Clare's Mercy Hospital. Patient education is conducted on a formal and informal basis; the formal programs have specific content and are taught by an assigned person or persons usually in a classroom or group setting. Informal teaching occurs incidentally, usually at the patient's bedside, by appropriate health care professionals.

The senior administrative body and health care personnel with patient education responsibilities at St. Clare's Mercy



Hospital have recognized deficiencies in the current system of educating patients. In December, 1986 an 11 member multi-disciplinary Patient Education Task Force was established to study the current situation and recommend ways of improving patient education at St. Clare's. Some of the major findings of this task force included: inadequate financial and human resource allocation for patient education programming; lack of overall coordination of patient education activities; deficient guidelines for the development; implementation and evaluation of patient education programs; inadequate training of health care professionals for the assumed teaching role; and lack of accountability for the patient education function (Patient Education Task Force, 1989).

Central to the above findings is the importance of having accountability for patient education activities throughout the pertinent areas of the hospital. Durbach (1987) states:

If the kind of patient education expected is a formal program with approved content, appropriate teaching aids and an established means of documenting teaching, then the expectation that clinical staff or managers with a full load of responsibility will be able to take this on and actually produce such programs is unrealistic.

To put it bluntly, patient education is never a crisis. In institutions like hospitals, where staff are working under stress and have more to do

than time to do it in, patient education projects usually get stuck in the middle of the pile on at least one person's desk. But they must be at the top of the pile on at least one person's desk if anything is to be accomplished. (p. 20)

### Rationale for the Study

There is a definite need in the health care sector for expanded, well organized patient education programs. The evaluation of such programs to determine their effectiveness for patients requires detailed study and analysis. Health care professionals may spend hours developing and implementing, what they consider to be, excellent patient education programs, only to find the patient has not responded in an expected positive manner. The patient's perspective must be considered. Patients should have input into the planning and evaluation of patient education programs.

### Purpose of the Study

The purpose of this study was to plan, develop, implement and evaluate one formal patient education program, namely the Femoral Popliteal Bypass Surgery Patient Education Program.

Femoral Popliteal Bypass refers to a specific vascular surgery procedure used to bypass occluded arteries in the lower extremities. Femoral and popliteal refer to the exact anatomical areas of grafting. The superficial femoral artery

is the most common site of occlusion in peripheral arterial disease (Mosely & Marston, 1986, p. 24). It is only when atherosclerotic arterial occlusive disease becomes progressively disabling with the impending threat of limb loss that peripheral reconstructive vascular surgery is considered. This surgery attempts to improve circulation and prevent the loss of the affected limbs. The following diagram depicts the specific anatomical area involved (Figure 1).

In order to prepare for surgery and self-care after surgery, the patient who undergoes Femoral Popliteal Bypass Surgery requires specific information about the particular disease process, the pre- and post-operative procedures to follow, the operative procedure itself, possible complications, medication regime, activity progression and nutrition. The Patient Education Program for Femoral Popliteal Bypass Surgery attempted to present the required information, in an effective manner, to patients undergoing this particular procedure at St. Clare's Mercy Hospital during the period of the study.

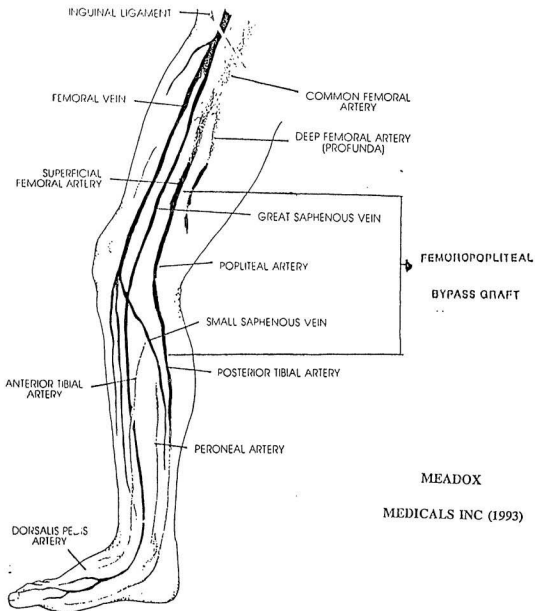


Figure 1. Vascular Chart

### Research Questions

Specifically, the study addressed the following questions:

1. To what extent was the content of the Femoral Popliteal Bypass Patient Education Program suitable for the target patient population?
2. How effective was the method of conducting the Femoral Popliteal Bypass Patient Education Program in achieving desired results among the target patient population?
3. To what extent has the Femoral Popliteal Bypass Patient Education Program increased patients' knowledge and understanding of the disease process which necessitated vascular surgery?
4. To what extent has the Femoral Popliteal Bypass Patient Education Program increased patients' knowledge and understanding of the pre-operative, surgical and post-operative procedures?
5. To what extent was the target group satisfied with the Femoral Popliteal Bypass Patient Education Program?

### Significance of the Study

This study has assisted in a small way to improve patient education at St. Clare's Mercy Hospital by providing a well organized formal program for patients undergoing Femoral Popliteal Bypass Surgery. The evaluation process identified areas, from a patient perspective, where improvements are

required to better identify and fulfil the patient's needs.

### Delimitations of the Study

The following factors are acknowledged as delimitations in the study:

1. The study participants were limited to mentally competent patients admitted to St. Clare's Mercy Hospital for elective Femoral Popliteal Bypass Surgery over the period of the study.

2. The program was taught by an assigned Registered Nurse working in the specific area of the hospital where these specific patients were located. Teaching this program was just one of her many responsibilities.

3. The study was intended to include a sample size of thirty (30); however, unforeseen circumstances necessitated utilization of a sample size of fifteen (15).

### Limitations of the Study

The following are possible limitations of this study:

1. Participants included in this study came from varied, personal, economic and educational backgrounds; therefore, their pre-study knowledge of vascular surgery may have had an impact on the results of both the pre- and post-test phases.

2. The administration of a pre-test to the participants may have affected the external validity of the project because

of the interaction of the contents of the teaching program and the pre-test.

3. The participants in the study may have been impacted by uncontrollable variables which may have had an effect on their ability to assimilate and retain information presented in the program. For example: poor emotional and physical state of health reduces the patient's ability to concentrate on information presented.

4. The measuring instruments were administered to a small designated, specific group of people within one health care facility. However, similar situations may exist in other comparable health care facilities; it may be possible to generalize results to these other agencies.

5. There was the possibility that participants may misinterpret questions on the measuring instruments.

6. Personal bias and/or style of teaching may have affected results obtained from this study.

#### **Definition of Terms**

**Patient Education Services:** A planned "group" of services within any health care institution that facilitates the development of patient education at all levels throughout that organization (Patient Education Committee, NHHHA, 1986, p. 2).

**Primary Health Care:** A basic level of health care that includes programs directed at the promotion of health, early

diagnosis of disease or disability and prevention of disease. Primary health care is provided in an ambulatory facility to numbers of people, often those living in a particular geographic area. In any episode of illness, it is the first patient contact with the health care system (Hamilton et al., 1983, p. 806).

**Patient Education:** An active process of information exchange or skill techniques demonstration with patients, with the aim of producing an observable change in behavior or attitude (Cahill et al., 1987, p. 10).

**Femoral Artery:** An extension of the external iliac artery into the lower limb, starting just distal to the inguinal ligament and ending at the junction of the middle and lower third of the thigh (Hamilton et al., 1983, p. 372).

**Femoral:** Pertaining to the femur or thigh. The femur is the thigh bone which extends from the pelvis to the knee. The pulse of the femoral artery is palpated in the groin (Hamilton et al., 1983, p. 372).

**Popliteal Artery:** A continuation of the femoral artery, extending from the opening in the abductor magnus, passing through the popliteal fossa at the knee, dividing into eight branches, and supplying various muscles of the thigh, leg and foot (Hamilton et al., 1983, p. 789).

**Bypass:** Any one of the various surgical procedures to divert the flow of blood or other natural fluids from normal anatomical courses. A bypass may be either temporary or



permanent. Bypass surgery is commonly performed in the treatment of cardiac and gastrointestinal disorders (Hamilton et al., 1983, p. 150).

**Accreditation:** A process whereby a professional association or nongovernmental agency grants recognition to an institution for demonstrated ability in a special area of practice or training, as the accreditation of hospitals by the Canadian Council of Hospital Accreditation (Hamilton et al., 1983, p. 5).

**Tertiary Care:** A specialized high technical level of health care that includes diagnosis and treatment of diseases and disabilities. Such care is usually carried on in sophisticated, large research and teaching hospitals. Specialized intensive care units, advanced diagnostic support services and highly specialized personnel are usually characteristic of tertiary health care. It offers a highly centralized care to the population of a large region and, in some cases, to the world (Hamilton et al., 1983, p. 970).

**Atherosclerotic:** A common arterial disorder characterized by thickening, loss of elasticity, and calcification of arterial walls, resulting in a decreased blood supply, especially to the cerebrum and lower extremities (Hamilton et al., 1983, p. 82).

### Summary

This chapter has given a broad overview of patient education generally as well as the specific problems related to patient education identified by St. Clare's Mercy Hospital. The major advantages to patients and health care agencies of implementing well organized patient education programs, the rationale for and purpose of the study were also presented. Research questions were identified, the significance, delimitations and limitations of the study were outlined. Unfamiliar terms were defined to enhance the reader's understanding of the study.

Chapter II summarizes aspects of the literature reviewed pertinent to this study. Chapter III outlines the design of this research project, and describes the analysis of the data obtained during the study. Chapter IV contains the findings of the study. In Chapter V, a summary of the findings of the study is presented; conclusions are drawn and recommendations are made to help improve patient education in the area of vascular surgery.

## CHAPTER II

### Review of Related Literature

#### Introduction

Numerous articles and reference books pertinent to patient education were reviewed in an effort to identify the best approach for planning, organizing, developing, implementing and evaluating a Femoral Popliteal Bypass Patient Education Program. This chapter summarizes literature reviewed, giving an introductory overview of the current status of patient education, the organization, methodology and content of patient education programs, as well as possible evaluative processes for patient education.

#### The Importance of Patient Education

The health care consumer demands current, accurate health care facts. Health care professions scramble to respond to these increasing demands, while, at the same time, trying to keep abreast of ever changing technology and knowledge.

Webber (1990) provides a current definition of terms (originally outlined by Squyres, 1983), distinguishing between health education and health information:

Health education is a formal program designed to produce behavioral changes in patients that will lead to an improvement in their health. It includes both patient education and health promotion.

Patient education is the preparation of patients for medical procedures, in addition to the provision of information about health problems. Health promotion programs are aimed at increasing the awareness of the general public and include programs such as smoking cessation, weight loss, parenting and relaxation training. Unlike health education, health information alone is not designed to change behavior. (p. 1090)

Bartlett (1988) summarizes the current state of patient education in these words:

In general, patient education practice lags about fifteen years behind current research. As patient education receives more attention from administrators and policy makers, it will be necessary to upgrade patient education practice to reflect the best that current research offers. At the same time, patient education methods must not be so esoteric that they cannot be incorporated readily into clinical practice. Quality assurance mechanisms need to maintain the fragile balance between what is desirable and what is possible. (p. 135)

Patient education is actually part of a larger, national movement in consumer health education. Governments and private agencies have recognized that life style directly

affects health. They are spending millions of dollars to discourage people from smoking or becoming overweight and to encourage people to engage in physical exercise and watch for the warning signs of disease. Hospitals can make an important contribution by implementing properly planned and executed patient education programs. Major benefits of patient education have been identified as: improved patient care and health; reduced cost through fewer patient readmissions; and shorter lengths of stay and better utilization of hospital resources. An important emphasis is also placed on having a policy in support of patient education, the physical, human and financial resources to implement effective programs, methods for identifying patient education needs, and finally, a valid evaluation system for such programs (Passett, 1978).

It is difficult to gain the support required to properly develop, implement and evaluate patient education programs. Giloth (1985) states:

In spite of an increasing number of hospitals with co-ordinated, institution wide programs, and an ever expanding research base supporting the effectiveness of educational interventions, top management support for patient education continues to be difficult to obtain and to maintain. Within an environment that is becoming markedly concerned with cost containment, however, demands for quality and efficiency require patients to assume more of a

self-care role. This requires carefully designed patient education programs that cut across departmental setting and diagnostic lines. Justification for an increased emphasis on patient education rests on the health status, quality of care, cost efficiency, risk management and patient satisfaction benefits of providing educational services. (p. 299)

Karem, Sundre and Smith (1986) used a study of pediatric patients with the same diagnosis and initial treatment when evaluating the cost/benefit of a patient education program. Two groups of patients were studied. One was administered the patient education program and the other was not. They were evaluated as to their utilization of health care services resulting from non-compliant behavior. They found less incidence of complications with the group that received the formalized patient education program. They derived a benefit to cost ratio of over seven to one, thus the effectiveness of the program was demonstrated. The major conclusion derived from this study was that people who are educated to assume responsibility for their own health are a benefit to society.

There are three principal barriers to patient education. First, nurses and other health care personnel are traditionally ill-prepared to teach. Second, there are a multitude of professionals covering the same content. This necessitates standardization of content, delegation of teaching responsi-

bility and communication among a large number of staff members. Third, there is a low priority assigned to patient education by administrative and supervisory personnel. Budget allocations for patient education reflect this low priority (Cohen, 1981).

Patient education is a vital aspect of patient care. As an interactive process, it involves client and health team members working together to achieve common goals. While patient education has been somewhat neglected in the past in many hospitals and other health care settings, it represents a very effective means of helping health care consumers help themselves. Compared to continuous re-hospitalization for poor health and illness care management, it represents a cost effective means of optimal health care management by clients as copartners in health team management of selected health care therapies. (MacGill, Williams, & Caspi, 1986, p. 49)

#### **Organisation, Methodology and Content of Programs**

Durbach (1987) emphasizes the importance of having a competent accountable person responsible for patient education versus patient education carried out on an ad hoc basis. She elaborates on the roles of such a person:

What is needed in a patient education coordinator is skill in communication. Communication skills which include: a lucid writing style, editing skill, an understanding of the basic principles of layout and design of written materials, a grasp of the principles of learning theory sufficient to apply to a variety of content, media and population groups, basic understanding of relevant technology such as the printing press, video production, desktop publishing and an ability to work with people without intimidating or being intimidated. (p. 21)

The patient education coordinator performs several important functions: conducting a needs analysis; developing goals and objectives; stating general objectives in behavioral terms; conducting task analysis; formulating programs; specifying instructional activities; and designing evaluation procedures (Zonca, 1980).

The patient teaching process has several important components which include: an assessment of the characteristics of the learner in relationship to the overall content and objectives; establishing specific behavioral objectives and choosing the methodology to meet those objectives; specific intervention based on learning principles; the effective use of visual aids materials; and an evaluation of the products of the teaching-learning process to determine if the goals were



achieved (Cohen, 1981).

Hicks (1987) proposes a model for partnership in patient education. She charges that the health care team often tends to establish routines for care and education without input from the patient. The patient's perception of his/her needs and goals for therapy are not usually considered. Her model is based on Orem's self-care deficit theory. She maintains that the patient benefits from self-care education and consumer awareness. Her model contains the following components: initiation, communication, co-operation, negotiation, learning contract, participation, motivation, revision and termination. She describes the application of her model in a case study format. In her opinion:

The partnership model illustrates that patient education is an integral part of the nursing process. It indicates that non-compliance may exist only when the patient's chosen goals are not met. Goals imposed upon him will not be viewed as having value and will not motivate a change in behavior that lasts beyond the hospital doors. (p. 18)

Patient educators are seeking approaches to patient education which provide a balance between expertise and time available with the most effective approaches to initiate behavior change. Bartlett (1985) proposes a three-step approach to patient education. The three steps are: (a) use

of interpersonal skills, (b) teaching, and (c) overcoming obstacles to behavior change. The three steps are fluid and inter-related. This approach may be adapted to a variety of clinical settings. It also acknowledges the fact that many health care professionals do not have the time or expertise to do extensive education; however, it encourages them to incorporate basic educational activities into their usual caregiving activities.

Presenting information is one thing, but to have the patient and family demonstrate acceptance and make changes in general lifestyle and daily routines is quite another. As stated by Bell and Whiting (1981):

The responsibility for the treatment regime and change in behavior ultimately rests with the patient and family. The health professional is responsible for providing support and ensuring access to the tools (information, skills and attitudes) which the patient and family required. (p. 25)

Assessment is the initial and imperative first step which involves at least four aspects, namely: (a) degree of adjustment or emotional reaction to disorder and treatment; (b) level of understanding of disorder, treatment, future incapacity, and lifestyle; (c) family or other support; and (d) motivation and ability to learn (Wilson-Barnett, 1985).

"Goals for teaching must be tempered by all these factors. If poor acceptance, poor coping ability and motivation exist, the essential material or skills may have to suffice" (Wilson-Barnett, p. 29).

Holub, Eklemd and Keenan (1975) emphasize the importance of recognizing that anxiety is the natural companion of an acute phase of illness. Health care professionals working with patients and family should be aware that instruction and knowledge is often not assimilated because of increased levels of anxiety.

Cohen (1981) also recognizes that timing is very important in patient teaching:

Timing of instruction can be crucial. Patients who are anxious, in pain or under sedation tend not to remember. Therefore, written instructions should be given. This idea of timing may account for the difference in patient belief regarding the ease of obtaining information versus the fact that almost half the patients still have questions at the time of discharge. (p. 13)

Wallace (1985) reviews several studies which support the premise that pre-operative information may act to forewarn and thereby sensitise the patient to the fearful aspects of surgery. Information, given in an appropriate manner, encourages patients to prepare themselves, that is, to develop

coping strategies to control their fear. Accurate information about surgery may encourage patients to focus on the objective, non-emotional aspects of the impending event.

Wallace (1985) goes on to elaborate on two studies carried out within her own health care setting. The target group was patients undergoing minor gynaecological surgery. The patient's preference for special preparatory communication, type of information, its timing and the format of presentation were examined. She found the majority of patients welcome special preparation; the most preferred type of information is procedural. Overall, she found the more information patients were given about the procedure the better they responded to the surgery, pre-operatively and post-operatively.

In another study of the outcomes of patient education (Worley, 1986), it was shown that a well organized, personalized program can yield great savings as well as improved patient satisfaction. Patients who have been well educated about their conditions have fewer post-operative complications, need less analgesics and spend one to one and a quarter fewer days in the hospital. Beyond this, they feel better and return to their normal daily routines sooner after discharge than those patients who have not participated in patient education programs. In short, the total outcome is better for both hospital and patient.

When discussing the relationship between post-operative

pain and pre-operative patient education, Bray (1986) states: "After surgery an anxiety-pain cycle and anticipatory pain is fully realized. Preoperative instruction will not change the existence of pain, but it could reduce its intensity because some fear of the unknown was eliminated" (p. 679).

Preparation for the teaching role is another major consideration. It is important that health care educators are cognizant of and are able to apply the principles of adult education. Wilson-Barnett (1985) states:

Teaching by hospital and district staff should be recognized as a major responsibility and one for which we need substantial training. The absence of practice in this area is matched by a convincing body of evidence that patients appreciate and benefit from being taught. (p. 28)

Patient education programs should include written instructional guides that address staff functions as well as an educational plan for patients (AHA, 1979).

Holden (1985) stresses the importance of using four key elements when teaching patients, namely: hearing, seeing, writing and talking. Timing is also very important in that one should not teach patients who are hungry, frightened or hurting. Also avoid using medical jargon and information overload when teaching patients.

Accurate and readable patient education materials

reinforce verbal instructions and serve as a resource at home. The content of patient information material should be accurate and up-to-date, original, include what the patients want to know as well as what they need to know, be outlined in a layperson's terms and be flexible to adapt to the various educational levels of patients (Boyd, 1987).

According to Duffy (1988), written materials used for patient education should be tested for their readability level and they should not be used if their readability level exceeds the reading level of the population for whom they are designed. He goes on to state:

It is difficult to find appropriate educational materials for patients with low literacy skills. In developing your own, there are a number of points to consider. Include only the most relevant material. Avoid extraneous background material. Select a method of presentation (text with visuals, demonstrations, audiotapes, etc.) that is most effective. Lower case type and large type are best for poor readers. If there is no specific sequence to the material presented, place the most important information first or last because this information is remembered best. (p. 114)

Kibbee (1980) proposes a novel way of teaching and evaluating the knowledge gained by patients. She suggests the

development of a game and cross word format to reinforce and evaluate the retention of information imparted to patients pertinent to their illness, treatment and recovery. She maintains patients are able to enjoy playing games while at the same time learning necessary information.

Gagliano (1988) reviewed 25 methodologically sound studies on the efficacy and limitations of video when used for patient education. The major conclusions reached were: video programs consistently increase short-term knowledge; they instruct as well as and often more effectively than written materials, lectures or even individual counsellors. However, decay in long-term knowledge retention and compliance remains as much a problem after video intervention as after traditional methods of patient education.

Firby, Toker and Caress (1991) studied nurses' response to the introduction of computer assisted learning in patient education. They found:

The actual format of the programs was very highly thought of. Program content had been designed to be visually stimulating, and thus made considerable use of color graphics and animation. These elements were considered to add something to the programs; and to make them more interesting and more enjoyable to use. Animation was considered to have been used to good effect in anatomical diagrams, since it actually showed you how things

worked. (p. 990)

Current trends in operative procedure, types of grafts used (artificial and human), anticoagulant therapy and effectiveness of the various procedures and materials used in bypass surgery were explored in the literature. Several authors summarized the findings as outlined below.

Lamberth and Karkow (1986) conducted a comparative study on 65 standard femora-tibial or peritoneal vein grafts performed during the same time interval by the same surgeons. They concluded: "The sequential vein graft techniques may result in more complete extremity revascularization and increased graft flow, thereby improving patency rates" (p. 531).

It is generally agreed that the best material for femopopliteal artery bypass is autogenous saphenous vein. However, there are 25% of patients in whom this vein is either unavailable or unsuitable. In this instance the choice must be between using dacron, expanded teflon (PTFE) or denatured enmeshed human umbilical vein (Mosely & Marston, 1986).

Dicumarol (anticoagulant), when used following bypass surgery, is apparently able to lower the probability of reocclusion, particularly in those patients with very advanced arterial occlusive disease. However, the presence or absence of risk factors such as smoking, high cholesterol diet, and lack of exercise may make it difficult to determine the exact effect of the anticoagulant (Kretschmer, Wagner, Polterauer,



Ehringer, Menaie & Schemper, 1987).

### Evaluation

Borg and Gall (1983) define educational evaluation as: "The process of making judgements about the merit, value or worth of educational programs, projects, materials and techniques" (p. 733). Popham (1975) defines two types of evaluation: "Formative evaluation refers to assessments of worth focused on instructional programs that are still capable of being modified. Summative evaluation refers to assessments of merits focused on completed instructional programs" (p. 733).

The health care sector has many similarities to the school system in relation to the evaluation process. Hickman (1986) points out the growing importance of evaluation to the school system: "As the demand and desire for documentation and 'accountability' increase proportionately in the face of declining enrolments, staff cutbacks and soaring education costs, so does the emphasis on evaluation" (p. 1).

The health care field has a demand and desire for documentation and accountability. However, there is an increase in the number of acutely ill persons requiring hospital care with staffing patterns which find it difficult to cope with the extra load. The cost of health care is also escalating.

We are beginning to incorporate consumer evaluation into

selected patient education projects. An educational program that meets institutional goals, but does not meet the needs of patients is ineffective. Programs that look good on paper but do not meet patient's needs ought to be altered or eliminated and replaced by more relevant programs (MacGill, Williams & Caspi, 1986, p. 48).

Roche and Gosnell (1989) contend: "If patient learning during hospitalization is to be promoted as a means of improving health practices, more intensive investigations are needed to determine results of hospital teaching programs" (p. 32). They used the Health Belief Model and performance evaluation as a framework for their study. The purpose of their study was to evaluate a breast self-examination teaching program conducted with women who were confined to an inpatient gynaecological unit. The Health Belief Model proposes a relationship among beliefs and perceptions in an individual's decision to take health action. Performance evaluation referred to the extent to which participants behaviors change as the result of an educational experience. They found teaching breast self-examination to women during hospitalization is an effective means of patient education since a significant number of participants performed regular BSE following hospitalization.

Garding, Kerr and Bay (1988) summarized the findings of their study to determine the impact of patient education follow-up by telephone on the knowledge of the post myocardial

infarction (MI) patient as follows:

In this study, patients who received telephone follow-up calls acquired greater knowledge than the control group. These findings suggests the patient education for the MI patient can be effective in the six to eight week period after hospital discharge. Although the teaching process begins in the hospital, the lack of time to provide information and a decrease in readiness to learn are frequent barriers to receiving and retaining information. (p. 361)

Rahe, Scalzi and Skine (1975) evaluated a post-myocardial infarction patient teaching program. They used a convenience sample of 24 patients in their one group, pre- post-test design. The only area on the objective test constructed by the researchers that showed a significant difference was the content related to returning home.

Deberry, Jeffries and Light (1975) reported on a similar teaching programme for hospitalized cardiac patients. Their one group, pre- post-test design, used a convenience sample of 29 patients. Following instruction, the patients knew significantly more about their medications than persons who had not received instruction. The authors contended that time of teaching was important as well as the inclusion of family members, but they did not include these variables in the

study.

Hathaway (1986) performed a meta-analysis of 68 studies to examine the effect of pre-operative instruction on post-operative outcomes. The results of this meta analysis supported pre-operative instruction as an intervention which has a favorable effect on operative outcomes.

Marshall, Penckofer and Llewellyn (1986) described a study in which a convenience sample of two comparable groups of patients was studied to assess the effectiveness of a structured teaching guide used by nurses in educating the patient and his family about normal post-operative recovery following Coronary Bypass surgery. One group was educated by an unstructured method; the other group received structured teaching with the use of a guide developed by nurses experienced in recovery after heart surgery. They found structured teaching had no initial effect on patient's knowledge, but it did have a definite effect on their compliance with post-operative health behaviors.

Rahe et al. (1975) provide an example of an evaluation questionnaire administered to patients in a cardiac rehabilitation patient teaching program. Another excellent source of sample questionnaires is the American Hospital Association's Manual (1979) entitled Implementing Patient Education in the Hospital. McGill et al. (1986) give an excellent example of a questionnaire they employed to determine patient satisfaction with a specific patient education program. All of these

sources served as a resource for developing the instruments used in this study.

### **Summary**

The economic, social and technological changes occurring in the health care sector today are increasing the need for better quality and more effective consumer education. The literature emphasizes the need to increase the resources utilized on the preventive aspect of health care. It is also important to have an accountable person or body responsible for the patient education function. Evaluation of patient education programs and their respective outcomes should be an important part of health care agency's Quality Assurance programs. It has been proven that by utilizing effective patient education programs, costs can be reduced and a higher quality of health care can be attained.

### CHAPTER III

#### Design of the Study

##### Introduction

This chapter describes the methodology which was applied to determine the patient's knowledge gained and satisfaction with the Femoral Popliteal Bypass patient education program. It describes: (a) development, validation and reliability of the program and measuring instruments; (b) administration of the instruments; and (c) the sample selection.

##### The Program

The Femoral Popliteal Bypass patient education program (Appendix A) was developed by the researcher using a format developed by the Patient Education Committee at St. Clare's Mercy Hospital as a guide (Appendix B). Information for the content of the program was gathered from various sources: current literature, discussions with a vascular surgeon, and nurses working with patients undergoing femoral popliteal bypass surgery (both on hospital units, the operating room, recovery room and intensive care unit). Consideration was given to making the program stimulating and interesting, with visual (video, diagrams), oral and written interaction on behalf of the patient.

The literacy level of patients participating in the program was a major concern. To overcome this barrier the

program was designed for participants who had achieved at least a high school level of education, with the understanding that the nursing instructor would adapt her teaching to accommodate the comprehension level of each patient entering the program. This required that the nursing instructor read each segment of the program to the patient, using lay terms which the patient was able to understand. Audio visual aids were used to reinforce material presented. Adult learning principles were employed as a basis for interaction with patients participating in the study. For the period of the study all modules of the program were taught consistently by one nursing instructor. The researcher spent considerable time with the nursing instructor, prior to commencement of the study, to explain the parameters of the study.

The nursing instructor guides and teaches the patient on an individual basis. This is very important as it offers the patient the opportunity to ask questions in a quiet, non-threatening atmosphere. The purpose, philosophy and objectives of the program are outlined. The procedure for admission to the program, as well as the length and frequency of the program, are explained. The main body of the program contains the important information which was presented to patients admitted to St. Clare's Mercy Hospital for Femoral Popliteal Bypass surgery. Pre-test/post-test and satisfaction questionnaires are also included.

As each module of the program was completed, it was

reviewed by the Patient Education Committee, a vascular surgeon and nursing staff with particular expertise in vascular surgery. Their critique and comments were helpful in revising each section. The same process was used once the program was completed in its entirety. The program, as well as a proposal to implement and evaluate the effectiveness of such a program, was then submitted to the Human Investigations Committee of St. Clare's Mercy Hospital for a final review and approval. A formal letter of approval for the study was subsequently received by the researcher (Appendix C).

### The Instruments

A pre- and post-test questionnaire (Appendix I of the Femoral Popliteal Surgery Patient Education Program) was developed. Each correct response was given a value of one point. Each incorrect response was given a value of zero. The range of possible scores was 0-45. The pre- and post-test was administered to the seven members of the experimental group and eight members of the control group. Only the experimental group participated in the Femoral Popliteal Bypass Patient Education Program. Comparison of responses between these two groups was utilized to determine the extent to which the experimental group had achieved the stated objectives of the program.

A satisfaction questionnaire was given to participants in the experimental group to determine their degree of satisfac-



tion with the program (Appendix III of the Femoral Popliteal Surgery Patient Education Program).

The Femoral Popliteal Bypass Patient Education program and questionnaires were circulated to health care professionals who have specific knowledge and expertise in the area of vascular surgery and/or patient education at St. Clare's Mercy Hospital. These persons included: The Director of Nursing responsible for surgery, the nurse in charge of the vascular surgery patient unit, Dr. Kevin Hoddinott (a vascular surgeon), and members of the Patient Education Committee. The writer's thesis supervisor, Dr. G. Hickman, and thesis committee members, Sister Mary Manning and Dr. D. Treslan, also reviewed the Femoral Popliteal Bypass program. Their review and critique of the program and questionnaires for omissions, inappropriate or ambiguous sentences or questions, and suitability for lay persons was used to revise the program and measuring instruments. The revised program and measuring instruments were then circulated to the same individuals for further validation.

To establish reliability the program was taught, pre- and post-test and satisfaction questionnaires were administered to two patients admitted to St. Clare's Mercy Hospital for femoral popliteal bypass surgery prior to the commencement of the study. Revisions and adjustments in the program were made

based on the findings of this pilot.

### Population and Sample

A convenience or incidental sample is one whose units are selected because they happen to be in a particular place at a particular time (Knapp, 1978, p. 210). The setting for this study, St. Clare's Mercy Hospital, and the fact that the independent variable--the Femoral Popliteal Bypass Patient Education Program--is only applicable to patients having this particular procedure performed, dictated the sample population. The convenience sample was composed of 15 mentally competent, patients entering St. Clare's Mercy Hospital for elective femoral popliteal bypass surgery. Patients were randomly assigned to an experimental or control group.

### Administering the Questionnaires

The pre-test (Appendix D) was administered to the experimental group prior to their surgery and the teaching of the education program. The control group members were also administered the pre-test prior to their surgery; however, they did not participate in the education program. The post-test was administered to both groups prior to discharge. The instructor completed the questionnaires by asking each patient the questions verbally (adapted to the patient's level of comprehension) and recording the response. This was done in a consistent manner with all patients, both in the control and

experimental groups, and all patients gave verbal assurance that they understood the questions.

The patient satisfaction questionnaire was given to patients who participated in the Femoral Popliteal Bypass Education Program just prior to discharge. They were instructed to complete the satisfaction questionnaire in the privacy of their home and return the instrument to the researcher in a self-addressed stamped envelope. To provide anonymity, they were not required to sign their name to this questionnaire. If they were unable to complete the questionnaire themselves, they were requested to have a family member assist them.

### Analysis of Data

Frequency tables were used to describe differences within the sample population for the variables of age, gender, education, previous hospitalization, smoking habits, and exercise patterns. The effect the independent variable (Femoral Popliteal Bypass Patient Education Program) had upon the dependent variable, knowledge gained, was measured by first computing descriptive statistics (mean, standard deviation and standard error) for each comparison group (pre- and post-test results) in the study. A one-way analysis of variance was applied to determine the statistical significance of results obtained. The purpose of analysis of variance is to determine whether groups differ significantly among themselves on the variables being studied (Borg, 1989, pp. 552-553).

Descriptive statistics were used to describe the extent to which the experimental group was satisfied with the Femoral Popliteal Bypass Patient Education Program. The response rate on the patient satisfaction questionnaire depended on the cooperation of patients, and in some cases family members, in completing these questionnaires at home and returning them within a suitable time frame.

## CHAPTER IV

### Findings of the Study

Findings of the research are included in this chapter. Data obtained from pre- and post-teaching questionnaires administered to an experimental and control group of patients at St. Clare's Mercy Hospital were analyzed. Frequency tables are used to describe differences within the sample population of 15 with reference to age, gender, education, previous hospitalization, smoking habits, and exercise patterns. A one-way analysis of variance was used to determine the differences between the experimental and control group scores on the pre- and post-test questionnaires. The same methodology was applied to determine the effect the above mentioned frequency table variables had upon the pre- and post-test scores of the sample population. Data obtained from a satisfaction questionnaire given to patients in the experimental group upon discharge from hospital were analyzed and descriptive statistics were used to explain the findings. The research questions posed in this study and the salient findings are outlined and discussed in an organized manner.

#### Research Questions

1. To what extent was the content of the Femoral Popliteal Bypass Patient Education Program suitable for the target patient population?

2. How effective was the method of conducting the Femoral Popliteal Bypass Patient Education Program in achieving the desired results among the target population?

3. To what extent has the Femoral Popliteal Bypass Patient Education Program increased patients' knowledge and understanding of the disease process which necessitated vascular surgery?

4. To what extent has the Femoral Popliteal Bypass Patient Education Program increased patients' knowledge and understanding of the pre-operative and post-operative surgical procedures?

5. To what extent was the target group satisfied with the Femoral Popliteal Bypass Patient Education Program?

The Femoral Popliteal Bypass Patient Education Program questionnaire (Appendix D) was designed to elicit responses which would assist in answering research questions one to four above.

The population sample ( $n = 15$ ) was assigned utilizing a table of random numbers, to an experimental and control group. The nursing instructor using an interview method administered the questionnaire to the experimental group prior to teaching of the program and surgery and again following surgery and prior to discharge. The control group was administered the questionnaire in the same manner upon admission prior to surgery and again following surgery and prior to discharge. The control group did not receive teaching of the Femoral

Education Program. There were seven patients in the experimental group and eight in the control group.

The initial stage of data analysis was to outline the sample frequency distributions for the independent variables of gender, age, education, previous hospitalization and the lifestyle habits of smoking and physical exercise per experimental and control group. These findings are shown in Tables 1-6 which follow.

Both study groups were predominantly male with the experimental group reflecting the greater ratio of males to females (Table 1).

Table 1

Number, Percentage and Ratio of Male Patients Compared to Female Patients in the Experimental and Control Groups, As Well As the Total Sample Population

Group	Gender	Frequency	% of Group	Ratio
Experimental	Males	6	85.7	6:1
	Females	<u>1</u>	<u>14.3</u>	
	Total	7	100	
Control	Males	5	62.5	1.6:1
	Females	<u>3</u>	<u>37.5</u>	
	Total	8	100	
Total Sample Population				
	Males	11	73.3	2.75:1
	Females	<u>4</u>	<u>26.7</u>	
	Total	15	100	

The mean age within the experimental group was 49.7 years (range 44 to 72 years) and within the control group 65.5 years (range 52 to 75 years). It should be noted the one person in the experimental group at 44 years of age has affected the mean age of the experimental group (Table 2).



Table 2

Age Distribution of Patients Within the Experimental and Control Groups

Group	Age (Years)	Frequency	Percent
Experimental	44	1	14.29
N = 7	51	1	14.29
	52	1	14.29
	62	1	14.29
	67	1	14.29
	72	<u>2</u>	<u>28.55</u>
Total		7	100
Control	52	1	12.5
N = 8	58	1	12.5
	61	1	12.5
	65	1	12.5
	66	1	12.5
	73	1	12.5
	74	1	12.5
	75	<u>1</u>	<u>12.5</u>
Total		8	100

The level of education attained within the experimental group was lower than that attained by the control group with

43% having grade 6 and less, whereas 100% of the control group had grade 8 education or higher. Two persons within the experimental group indicated having no formal education.

Overall, 65% of the sample population had less than grade 10 education (Table 3).

**Table 3**

**Level of Education Achieved Per Experimental and Control Group**

Group	Grade Achieved	Frequency	Percent
Experimental	0	2	28.6
N = 7	6	1	14.2
	8	0	0
	9	2	28.6
	10	0	0
	11	<u>2</u>	<u>28.6</u>
Total		7	100
Control	0	0	0
N = 8	6	0	0
	8	1	12.5
	9	3	37.5
	10	1	12.5
	11	<u>3</u>	<u>37.5</u>
Total		8	100

All patients in the study, with the exception of one patient within the control group, had been hospitalized on previous occasions (Table 4).

**Table 4**

**Previous Hospitalization Per Experimental and Control Group,  
As Well As the Total Sample Population**

Group	Hospitalized	Frequency	Percent
Experimental	Yes	7	100
N = 7	No	<u>0</u>	<u>0</u>
Total		7	100
Control	Yes	7	87.5
N = 8	No	<u>1</u>	<u>12.5</u>
Total		8	100
Total Sample	Yes	14	93.3
N = 15	No	<u>1</u>	<u>6.7</u>
Total		15	100

There was a fairly even distribution of smokers and non-smokers within the experimental and control groups (Table 5).

**Table 5**

**Distribution of Smokers and Non-Smokers Within the Experimental and Control Groups, As Well As the Total Sample Population**

Group	Smoker	Frequency	Percent
Experimental	Yes	4	57
N = 7	No	<u>3</u>	<u>43</u>
Total		7	100
Control	Yes	4	50
N = 8	No	<u>4</u>	<u>50</u>
Total		8	100
Total Population	Yes	8	53.3
N = 15	No	<u>7</u>	<u>46.7</u>
Total		15	100

The majority of patients in both the experimental and control groups exercised very little (53.3%). A greater number (3) in the control group exercised moderately than in the experimental group. Only one patient in the experimental group indicated exercising a lot (Table 6).

Table 6

Patient Exercise Patterns Within the Experimental and Control Groups, As Well As the Total Sample Population

Group	Amount of Exercise	Frequency	Percent
Experimental	A Lot	1	14.5
N = 7	Moderate	1	14.5
	Very Little	<u>5</u>	<u>71</u>
Total		7	100
Control	A Lot	0	0
N = 8	Moderate	3	37.5
	Very Little	<u>5</u>	<u>62.5</u>
Total		8	100
Total Population			
	A Lot	1	6.7
	Moderate	6	40
	Very Little	<u>8</u>	<u>53.3</u>
Total		15	100

Pre- and Post-Questionnaire Response Findings

The second stage of the data analysis process was to interpret the findings from the pre- and post-questionnaires.

The questionnaire (pre- and post-test) was a multiple

choice format with five sections, each pertinent to a specific area of knowledge (Appendix D) as follows:

1. Disease and lifestyle factors (questions 1-8).
2. Medication profile (question 9).
3. Pre-operative process (questions 10-19).
4. Post-operative process (question 20).
5. Preparation for discharge (questions 21-22).

Each correct response was given one point. Each incorrect response was given a value of zero. The range of possible scores was 0-45. The questions were weighted based on the amount and complexity of the materials covered in the program. The question groupings were weighed as follows:

1. Questions 1-8, 18 points possible.
2. Question 10-19, 17 points possible.
3. Question 20, 4 points possible.
4. Questions 21-22, 6 points possible.

Question nine on the pre- and post-test questionnaire was descriptive. Participants were asked to list the medications they were currently receiving, the dosage they were taking, why they were taking the specific medication (action of the drug) and what time (frequency) they were to take their medication. This question had to be deleted during the study because in most cases the medications were changed frequently during their hospital stay. The medications were prescribed prior to discharge were explained to each patient, however it would have required follow-up at home to determine whether this knowledge was understood and retained.

The complete breakdown of questionnaire responses per experimental and control groups per question is contained in Appendix E.

The one-way analysis of variance comparing the experimental and control groups' pre- and post-test scores per question groupings indicated one area of significant difference (at .05 level) in the pre-test mean scores for question grouping 21 and 22 (preparation for discharge). The control group's pre-test knowledge of preparation for discharge was greater than the experimental group's. However, after treatment the experimental group's mean score on the post-test had more than doubled, whereas the control group's remained relatively the same (decreased by .24 point) (Table 7). This indicates the teaching of the Femoral Popliteal Bypass Patient Education Program had a positive effect on the knowledge gained by the experimental group for the specific area related to preparation for discharge.

Although there were no other areas of significant differences identified, analysis of the data outlined in Table 7 led to the following observations which may serve to focus future research in this area.

1. The experimental group's total post-test score exceeded their pre-test score by 2.99 points, whereas the similar difference in scores for the control group was 2.12. Therefore the apparent knowledge gain overall was slightly more for the experimental group.

Table 7

One-Way Analysis of Variance: Experimental Versus Control  
Pre-Test/Post-Test Comparison Per Question Grouping

	Total Possible Score	Group	X	SD	F	DF	SIG
<u>Totals</u>							
Pre-Test	45	Exp	33.29	6.78	.287	14	.601
		Con	34.75	3.53			
Post-Test	45	Exp	36.28	5.56	.060	14	.809
		Con	36.87	3.64			
<u>Questions 1-8</u>							
Pre-Test	18	Exp	14.29	2.50	.156	14	.699
		Con	14.75	2.05			
Post-Test	18	Exp	16.29	1.97	.432	14	.523
		Con	15.50	2.56			
<u>Questions 10-19</u>							
Pre-Test	17	Exp	13.71	2.05	.772	14	.396
		Con	12.87	1.64			
Post-Test	17	Exp	12.28	2.62	2.980	14	.108
		Con	14.25	1.75			
<u>Question 20</u>							
Pre-Test	4	Exp	3.00	.81	.552	14	.471
		Con	2.75	.46			
Post-Test	4	Exp	3.00	.81	.000	14	1.000
		Con	3.00	.53			
<u>Questions 21-22</u>							
Pre-Test	6	Exp	2.28	2.56	<b>4.490</b>	<b>14</b>	<b>.054</b>
		Con	<b>4.37</b>	<b>1.06</b>			
Post-Test	6	Exp	4.71	1.25	.520	14	.483
		Con	4.13	1.8			

Experimental Group N = 7

Control Group N = 8

KEY: Exp = Experimental Group      F = F Value  
 Con = Control Group              DF = Degrees of Freedom  
 X = Mean                              SD = Standard Deviation  
 Total Possible Score = Total Score Possible For This  
 Question Grouping



2. A similar situation exists for the question grouping 1-8 (disease and lifestyle factors), where the experimental group's post-test score was two points higher than their pre-test score, whereas the control group's was .75 points higher. It is plausible the teaching of the Femoral Popliteal Bypass Patient Education Program assisted the experimental group to attain this positive difference in scores.

3. For question grouping 10-19 (the pre-operative process), the situation is the reverse where the control group attained 1.38 points higher on the post-test than the pre-test, whereas the experimental group's was 1.43 points less than their pre-test score.

4. For question 20 (post-operative process), the experimental group maintained their post-test score at the same level as the pre-test, and the control group gained .25 of a point on their post-test.

In summary, it is plausible that the Femoral Popliteal Bypass Patient Education Program may have assisted the experimental group to gain more knowledge than the control group in the areas of preparation for discharge and disease and lifestyle factors. The same cannot be said for the areas pertaining to the pre- and post-operative processes.

One-Way Analysis of Variance for Variables, Education, Smoking, Gender, Previous Hospitalization, Exercise Level and Age.

A one-way analysis of variance was conducted to determine the effects the variables of education, smoking, gender, previous hospitalization, exercise level and age had upon the pre- and post-test results of the sample population (experimental and control groups).

There was one area of significant difference (at 0.5 level) in the means for the pre- and post-test scores related to level of education (Table 8, #1). There was an 8 point difference in the pre- and post-test scores for the grade grouping of no schooling to grade seven. For the grade 8-10 grouping, the difference was only 1.29 points. For the grade 11 grouping, there was one point between the pre- and post-test scores. It is interesting to note all individuals in the sample population with no school to grade seven were members of the experimental group. The Femoral Popliteal Bypass Patient Education Program assisted this group in substantially increasing their knowledge and understanding of all areas related to their particular disease process.

When incorporating the variable of smoking, the value of F is approaching a level of significance (at the 0.5 level) with a significance level of .057 (Table 8, #2). Smokers were fairly evenly distributed within the experimental and control groups. The mean score for the smokers was 5 points higher on the post-test than the pre-test, whereas it was only .28 points higher for the non-smokers. It is postulated that smokers, knowing they are at higher risk for vascular disease, were more attentive to information presented generally than non-smokers.

Table 8

One-Way Analysis of Variance: Experimental and Control Groups' Pre- and Post-Test Results Incorporating the Specific Variables of Education, Smoking, Gender, Previous Hospitalization, Exercise Level and Age

Variable	Group	# in Group	X	SD	F	DF	SIG
<u>Education</u>							
Pre-Test	No schooling						
	to Grade 7	3	27.67	5.51	5.01	14	.026
	Grades 8-10	7	34.71	4.07			
	Grade 11	5	37.00	3.24			
Post-Test	No schooling						
	to Grade 7	3	35.67	6.51	.339	14	.719
	Grades 8-10	7	36.00	4.93			
	Grade 11	5	38.00	2.92			
<u>Smoking</u>							
Pre-Test	Yes	9	33.63	5.68	.118	14	.736
	No	6	34.57	4.86			
Post-Test	Yes	9	38.63	2.39	4.37	14	.057
	No	6	34.29	5.31			
<u>Gender</u>							
Pre-Test	Male	11	34.09	6.04	.001	14	.977
	Female	4	34.00	1.41			
Post-Test	Male	11	36.09	5.01	.517	14	.485
	Female	4	38.00	2.45			
<u>Previous Hospitalization</u>							
Pre-Test	Yes	14	34.50	5.05	1.55	14	.236
	No	1	28.00				
Post-Test	Yes	14	36.42	4.59	.29	14	.597
	No	1	39.00				

(table continued)

Variable	Group	# in Group	X	SD	F	DF	SIG
<u>Exercise Level</u>							
Pre-Test	A Lot	1	41.00		.98	14	.402
	Moderate	6	33.83	5.27			
	Very Little	8	33.38	5.07			
Post-Test	A Lot	1	42.00		1.08	14	.369
	Moderate	6	35.17	5.49			
	Very Little	8	37.00	3.51			
<u>Age</u>							
Pre-Test	< 59 years	5	37.60	3.29	2.03	14	.174
	60-69 years	5	32.20	6.26			
	> 69 years	5	32.40	4.39			
Post-Test	< 59 years	5	36.40	5.03	1.13	14	.354
	60-69 years	5	38.80	2.39			
	> 69 years	5	34.60	5.27			

## KEY:

Group	=	Separation of sample population into appropriate groupings
# in Group	=	Number of persons in the particular group
X	=	Mean
SD	=	Standard Deviation
F	=	Value of F
DF	=	Degrees of Freedom
SIG	=	Level of Significance

For the variables of age, gender, previous hospitalization and exercise patterns, there were no areas of major significance identified, however some general observations may

be informative to future research in this area.

1. For the variable of gender, the mean pre-test scores were comparable for both sexes. Post-test scores indicate a four point gain for the females while the males gained by two points (Table 8, #3). Level of education potentially could have influenced this outcome as on average the females had a higher level of education (Appendix F).

2. When considering the variable previous hospitalization, it is interesting to note the one individual who had never been hospitalized (Appendix E) attained 11 points higher on the post-test than the pre-test (Table 8, #4). A similar comparison for the remainder of the sample population, all of whom had been hospitalized on previous occasions, indicated a gain of only 1.92 points on the post-test scores (Table 8, #4). This indicates the potential impact hospitalization may have had in increasing the patient's knowledge and understanding of the entire disease process and its implications.

3. For the exercise pattern variable, the mean post-test scores for all the exercise groupings increased from the pre-test scores, with the "very little" exercise group's mean post-test score showing the greater level of increase (Table 8, #5). As with the smokers, the low exercise group may perceive they are at higher risk and therefore are more attentive to information presented.

4. When incorporating the age variable there were no relevant trends identified.

A one-way analysis of variance of responses by the experimental group on the pre- and post-tests, incorporating the variables of education, smoking, previous hospitalization, exercise patterns, gender and age, as compared to responses by the control group as well as feedback from the patients and the instructor for the program assisted in answering the first four research questions as follows:

**1. To what extent was the content of the Femoral Popliteal Bypass Patient Education Program suitable for the target patient population?**

Feedback from the instructor and the patients in the experimental group indicated the content of the program covered all the important and pertinent material in a comprehensive and understandable manner. There were several areas identified which patients would like to have more detailed information, namely; nutrition, diet, lifestyle, and hereditary factors.

**2. How effective was the method of conducting the Femoral Popliteal Bypass Patient Education Program in achieving the desired results among the target population?**

The method of conducting the Femoral Popliteal Bypass Patient Education Program was successful in enhancing the experimental groups' knowledge and understanding of at least one area, namely preparation for discharge (Table 7). Significant knowledge gains were also evident among the education grouping, no school to grade seven, all of whom were

members of the experimental group (Table 8, #1). Overall, the experimental groups' total post-test score gains from the pre-test scores were slightly greater than the control group's.

**3. To what extent has the Femoral Popliteal Bypass Patient Education Program increased patients' knowledge and understanding of the disease process which necessitated vascular surgery?**

The explanation given for the research question number two above serves to reinforce the fact that the program did increase patients' knowledge and understanding of the disease process which necessitated vascular surgery.

**4. To what extent has the Femoral Popliteal Bypass Patient Education Program increased patients' knowledge and understanding of the pre-operative, surgical and post-operative procedures?**

Results do not indicate a knowledge gain for the experimental group for the specific areas of pre-operative, surgical and post-operative procedures (Table 7, question groupings 10-19 and 20).

**5. To what extent was the target group satisfied with the Femoral Popliteal Bypass Patient Education Program?**

The Patient Satisfaction Questionnaire was designed to elicit a response to this question (Appendix G). The findings follow.

**Patient Satisfaction Questionnaire Response Findings**

Seven questionnaires were distributed to seven patients (the experimental group) who had participated in the Femoral Popliteal Bypass Patient Education Program upon their discharge from the hospital. They were asked to complete the questionnaire in the privacy of their home and return to the researcher in the stamped self-addressed envelope provided. They were not required to sign their name to the questionnaire. If they were unable to complete the questionnaire on their own, they were asked to have a family member assist them.

Six questionnaires were returned for a response rate of 85.71 percent. All questions were answered by all respondents.

The following is an outline of each question on the Patient Satisfaction Questionnaire and a summary of patient's responses to each question.

In all cases, 50 to 60 percent of respondents indicated they understood the topics listed very well. One respondent felt he had a poor understanding of atherosclerosis and two respondents identified a similar feeling with regard to the rules to follow once they return home. All other respondents felt they understood these topics fairly well to very well (Table 9).





Eighty-three percent of respondents indicated the Femoral Popliteal Bypass Patient Education Program provided the information required to satisfy their needs upon discharge. However there was one person who wished to have more in-depth information on exactly what to do and not to do at home (Table 10).

Table 10

Experimental Group: Question Two

---

Responses (N = 6)

---

Did you have any unanswered questions about your surgery or disease process when you left the hospital?

YES 1 (17%)

NO 5 (83%)

If yes, what were the questions?

1. What do I do at home to help myself recover?

---

All respondents indicated the program was beneficial to them (Table 11).

Table 11

Experimental Group: Question Three

---

Responses (N = 6)

---

Do you feel the teaching program was beneficial to you?

YES 6 (100%) NO 0 (0%)

If no, why?

---

All respondents indicated they felt comfortable in asking questions (Table 12).

Table 12

Experimental Group: Question Four

---

Responses (N = 6)

---

Did you feel comfortable in asking questions?

YES 6 (100%) NO 0 (0%)

If no, why?

---

Fifty percent of respondents rated the teaching performance of the instructor as excellent. Thirty-three percent rated it as very good and seventeen percent rated it as good. Thus overall participants were very satisfied with the teaching performance of the instructor (Table 13).

**Table 13**

**Experimental Group: Question Five**

Responses (N = 6)	1	2	3	4	5
How would you rate the teaching performance of the instructor?	0	0	1(17%)	2(33%)	3(50%)
KEY:	1 = Poor	2 = Fair			
	3 = Good	4 = Very Good			
	5 = Excellent				

One hundred percent of the respondents indicated the information given in the program helped to relieve their anxiety and lessen their fear (Table 14).

Table 14

Experimental Group: Question Six

Responses (N = 6)

Do you feel the information given you in the program made you  
feel less fearful and anxious?

YES 6 (100%) NO 0 (0%)

If no, why?

Sixty-six percent of respondents rated the program as excellent. Seventeen percent felt the program was very good and 17 percent thought it was good (Table 15).

Table 15

Experimental Group: Question Seven

Responses (N = 6)                      1                      2                      3                      4                      5

Overall, how would you  
rate the teaching program?                      1(17%)    1(17%)    4(66%)

KEY:                      1 = Poor                      2 = Fair  
                                 3 = Good                      4 = Very Good  
                                 5 = Excellent

Table 16

Experimental Group: Question Eight

---

Responses (N = 5)

---

Please feel free to offer any comments or suggestions for the program. The following is a list of sample comments from participants.

- (a) I think the program is excellent. It helps patients to understand what a bypass is all about.
  - (b) I would like to have more information on diet, hereditary and risk factors.
  - (c) I enjoyed the program but would like more information on what to do when I get home. For example, how long should I stay in bed? Should I walk for two minutes or two hours every day?
  - (d) The program was very helpful. The comments from my instructor were very reassuring and made me feel much better.
  - (e) I found the program every informative. Perhaps a little more information on diet would be good.
- 

Overall, respondents indicated they were **very satisfied** with the Femoral Popliteal Bypass Patient Education Program. They also identified areas of the program which need to be expanded to include more detailed information.

## CHAPTER V

### Summary, Conclusions and Recommendations

#### Introduction

The Femoral Popliteal Bypass Patient Education Program was developed by the researcher in response to an identified need for such a program. This research study was conducted to evaluate the effectiveness and value of the program by attempting to answer the following research questions:

1. To what extent was the content of the Femoral Popliteal Bypass Patient Education Program suitable for the target patient population?
2. How effective was the method of conducting the Femoral Popliteal Bypass Patient Education Program in achieving the desired results among the target population?
3. To what extent has the Femoral Popliteal Bypass Patient Education Program increased patients' knowledge and understanding of the disease process which necessitated vascular surgery?
4. To what extent has the Femoral Popliteal Bypass Patient Education Program increased patients' knowledge and understanding of the pre-operative and post-operative surgical procedures?
5. To what extent was the target group satisfied with the Femoral Popliteal Bypass Patient Education Program?

### Summary of Findings

The five research questions in this study were addressed through an analysis of: (a) the data gathered through pre- and post-test questionnaires administered to the experimental and control groups; (b) the effects the variables age, education, smoking, previous hospitalization, gender and exercise had upon pre- and post-test results for the sample population; and (c) responses obtained on a satisfaction questionnaire administered to the experimental group. The sample population included 15 patients who were admitted to the St. Clare's Mercy Hospital for Femoral Popliteal Bypass Surgery. Their consent was required prior to inclusion in the study.

The content of the Femoral Popliteal Bypass Patient Education Program was deemed to be suitable for the target patient population. However, there were areas identified by both the patients and the instructor where additional content would be welcome. These areas included information pertinent to nutrition, their activity and lifestyle once discharged from the hospital, as well as drug information.

The method of conducting the Femoral Popliteal Bypass Patient Education Program was successful in achieving limited positive results within the experimental group of patients. There was a significant gain in knowledge for the experimental group for the area of procedures to be followed once they are discharged from hospital.

There was no significant knowledge gain demonstrated in



the realm of disease and lifestyle factors, pre-operative and post-operative surgical procedures.

Education was found to be a significant factor, specifically for the education grouping of no schooling to grade seven, all of whom were in the experimental group. This group's gain on the post-test scores is reflective of the effect the Femoral Popliteal Bypass Patient Education Program had upon this group.

The responses to the satisfaction questionnaire by patients in the experimental group indicated that: 50 to 60 percent of participants understood the topics presented; 83 percent did not have any unanswered questions upon discharge from hospital; 100 percent of respondents felt the teaching program was beneficial for them; 100 percent of respondents felt comfortable in asking questions; 50 percent rated the instructor's performance as excellent, 33 percent as very good and 17 percent as good; 100 percent of respondents felt the program made them feel less fearful and anxious. When asked to rate the program overall, 61 percent of respondents rated the program as excellent, 17 percent as very good, and 17 percent as good.

Responses in the general comment section of this questionnaire indicated satisfaction with the program. Three respondents expressed a wish to have more information on diet, hereditary and risk factors.

### Conclusions

Overall, the experimental group gains from pre- to post-test scores of the study were slightly greater than the control group's, with one area of significant difference identified, implying the Femoral Popliteal Bypass Patient Education Program may have assisted in enhancing the experimental group's knowledge in certain areas. More credibility for this implication is gained when one looks specifically at the significant post-test results for the education grouping of no school to grade seven, all of whom were in the experimental group.

The following conclusions can be drawn from the findings of this study:

1. Patient education programs, when properly planned, developed, implemented and evaluated, can enhance the patient's knowledge and understanding of the specific disease process, relevant lifestyle factors and treatment protocols.
2. Having a dedicated, trained patient educator provides consistency and continuity both for patients and staff in the planning, developing, implementation and evaluation of patient education programs.
3. There were seven more males requiring Femoral Popliteal Bypass Surgery than females over the period of this study. This is in keeping with provincial and national statistics which indicate more males than females are affected with vascular disease (atherosclerosis).

4. Patients want and need pertinent information regarding their disease and treatment process.

### Recommendations

The focus of health care ought to be towards wellness and the prevention of illness. This could, in the long term, reduce the number of admissions and readmissions to hospital. Patient education can be an important link in the wellness/preventative continuum. The following recommendations flow from the findings of the literature and this study:

1. That consideration be given to assigning nursing staff specifically to the patient education function for defined service areas of the hospital (eg. surgery, medicine).

2. That the assigned patient educators, in conjunction with the Patient Education Advisory Committee, plan, develop, implement and evaluate patient education programs which are based on identified patient need.

3. That the evaluation component of this program, Femoral Popliteal Bypass Patient Education Program, be expanded to include follow-up of patient's progress after discharge from hospital to identify behavioral and lifestyle changes, number of readmissions and reasons for readmission to the hospital.

4. That the Femoral Popliteal Bypass Patient Education Program be expanded to include more information on nutrition and diet, hereditary and lifestyle factors and procedures/

concerns related to after discharge from hospital.

5. That increased and/or reallocation of resources be undertaken for the development of patient education programs.

This study has, to a certain extent, demonstrated the positive impact a well planned, developed and conducted patient education program can have on enabling the patient to better understand his/her particular health status. To determine the longer term effect of such a program, further research is required.

Patient education is an important component of patient care. As an interactive process, it involves patients and health team members working towards the achievement of common goals.

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**APPENDICES**

**APPENDIX A**  
**FEMORAL POPLITEAL BYPASS SURGERY**  
**PATIENT EDUCATION PROGRAM**

THIS PATIENT EDUCATION PROGRAM IS MEANT TO BE USED AS  
A GUIDE FOR AN INSTRUCTOR WHEN TEACHING PATIENTS  
PARTICIPATING IN THE  
FEMORAL POPLITEAL BYPASS EDUCATION PROGRAM.

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### **Purpose**

This program is designed to inform the patient and if applicable, family members, of the vascular disease process and the indications for surgical intervention. Signs and symptoms of peripheral vascular disease, lifestyle factors which contribute to the disease process and diagnostic procedures performed to confirm the presence and extent of peripheral vascular disease are included in the program. In addition, the surgical procedure including pre- and post-operative care is addressed.

### **Philosophy**

We believe the Femoral Popliteal Bypass Patient Education Program will enable patients and their families to have a greater understanding of the peripheral vascular disease process and treatment regime. We believe the Femoral Popliteal Bypass Patient Education Program will reduce patient anxiety and encourage patient and family compliance with and participation in the prescribed treatment program.

### **Length and Frequency of Program**

The program will take approximately three hours in total to teach, however this may vary depending on the individual situation with each patient and family. The program will be offered to all patients who are capable of understanding the content of the program and who have been admitted to St. Clare's Mercy Hospital for Femoral Popliteal Bypass surgery.

### **Referral Mechanism**

All patients who are able to understand the content of the program and who will undergo Femoral Popliteal Bypass surgery at St. Clare's Mercy Hospital. However, the patient's attending physician should be in agreement with the content of the program.

### **Questionnaires**

There are two questionnaires attached as appendices in this program. The first questionnaire (Appendix I) is designed to ascertain a patient's knowledge relevant to the content of the Femoral Popliteal Bypass Patient Education Program. It should be administered before and after the teaching of the program so comparisons can be made between



pre-training knowledge and post-training knowledge to determine the knowledge the patient actually gained from the program. The instructor will explain the rationale and procedure for completing the questionnaires to the patient and if he/she is willing to participate then a written consent form will be signed by the patient (Appendix II). The instructor will ask each patient the questions on the questionnaire and record the responses. This may resolve problems which may arise with literacy level and reading comprehension of patients. It will also avoid misinterpretation of questions.

The second questionnaire is evaluative in nature. It is designed to allow each patient to express their thoughts and feelings about the program. This patient satisfaction questionnaire (Appendix III) will be completed by the patient (and in some instances with assistance from family members) after discharge from the hospital. Anonymity can be maintained by not signing their name on the questionnaire. It will be returned in a stamped self-addressed envelope. Feedback obtained from this questionnaire will be used to revise the program.

### **Content**

This patient education program contains four modules, each containing a specific set of learner goals and object-

ives. The instructor should assess which modules are appropriate for each individual patient. He/she should choose an appropriate time and place to teach the program, preferably a quiet area which will reduce the possibility of interruption and enable the patient to concentrate on the material being presented. Initially, he/she should give the patient and where applicable, family members an outline of the program. Completion of the pre-training questionnaires can also be done at this time. The instructor should obtain a written consent from the patient indicating his/her willingness to participate in the program and study.

(Show the Video Lower Extremity Bypass)

**MODULE ONE****PERIPHERAL VASCULAR DISEASE PROCESS**

**Module One**  
**Peripheral Vascular Disease Process**

**Goal**

To enable patients and their families to increase their knowledge and understanding of the peripheral vascular disease process and to encourage positive lifestyle changes which may prevent advancement in the disease process.

**Learner Objectives**

Following participation in the module on the peripheral vascular disease process patients will be able to:

1. Describe in lay terms the basic anatomy and physiology of the circulatory system.
2. Define atherosclerosis.
3. List the lifestyle factors which contribute to the development of peripheral vascular disease.
4. List measures which may be taken to reduce the risk of escalating the vascular disease process.
5. Describe the signs and symptoms of peripheral vascular disease.
6. Describe diagnostic procedures which are performed to confirm the presence and extent of peripheral vascular disease.

### Anatomy and Physiology of the Circulatory System

Using the diagram of the heart (Appendix IV), the circulatory system (Appendix V and VI) explain in lay terms:

1. The circulatory system consists of the heart, lungs, arteries, capillaries, veins and blood.
2. The heart is a pear shaped muscular organ about the size of a clenched fist. It is located in the centre of the chest behind the breastbone and in front of the spine. The main function of the heart is to pump blood to the lungs and the rest of the body.
3. The lungs are really air sacs. Each person has two lungs, one on either side of the chest. As the air sacs fill with air, oxygen from the air is picked up by the blood and carried back to the heart. (Air is approximately 21% oxygen at sea level).
4. Exchange of oxygen and carbon dioxide takes place at the capillary level within the lungs.
5. Arteries are blood vessels which carry blood and nutrients away from the heart to all parts of the body. The arteries connect to small blood vessels called capillaries in the body organs. The exchange of nutrients and wastes takes place at the capillary level. The coronary arteries supply the heart with blood and nutrients.
6. Capillaries join together to form veins that carry blood back to the heart.
7. Oxygen is required by all body cells in order to

carry out their normal function.

### Atherosclerosis

Using the atherosclerosis diagram (Appendix VII), define and explain atherosclerosis.

1. Atherosclerosis is a gradual build-up of fatty deposits on the inner lining of the artery walls. The process of atherosclerosis usually begins at an early age. It gradually narrows the artery and thus decreases the blood flow through the arteries. It may involve the arteries in many different areas of the body including the heart, brain, legs, arms, etc. When the blood flow is considerably reduced, it is difficult to supply enough oxygen and nutrients to the affected area. There is also a danger a blood clot may form as the blood flows through the narrowed vessel, thus completely stopping blood flow to the area. A decrease in the number of risk factors in an individual's life may slow the process of atherosclerosis.

### Risk Factors

Using the risk factor chart (Appendix VIII), review the risk factors and changes in lifestyle which may help reduce atherosclerosis and thus the progress of peripheral vascular disease.

Controllable risk factors.

These are the lifestyle factors which have a tremendous influence on the development of peripheral vascular disease. However, they are under your control and with a change in a positive direction you may reduce the disease process.

1. **High cholesterol.** While a limited amount of cholesterol in the body is necessary to build cell walls, more than 50% of middle age Canadians have cholesterol levels which are too high. Too much cholesterol (in the blood) thickens the walls of the arteries and this process will eventually restrict the easy flow of blood through these arteries (Basic Life Manual, p. 6). This build-up of cholesterol can be reduced by limiting the intake of foods high in cholesterol and saturated fat--foods such as high fat and organ meats, whole milk dairy products and egg yolks.

2. **Cigarette smoking.** Research has found a definite relationship between cigarette smoking and several diseases, especially peripheral vascular disease. Nicotine in the smoke causes blood vessels to constrict; carbon monoxide in smoke results in less oxygen being available to the artery walls and smoke also has an adverse effect on the blood clotting mechanism which can eventually lead to blood clots forming within the blood vessels. Smokers face more than twice the risk of this happening than non-smokers.

3. **High levels of stress.** A certain amount of stress in your daily life is necessary. However, a high level of

stress can contribute to the disease process. Evaluate your lifestyle, take time to relax and enjoy pleasurable pursuits. If you are unable to do this on your own, there are community resources available to assist you.

4. **Obesity.** Excess weight puts undue stress on all of your body systems, therefore it is wise to maintain a healthy weight. You should know what a healthy weight should be for your height, body frame and age and aim to eat and exercise to maintain that weight. If you are overweight a professional dietitian may be able to assist you with the proper eating plan.

5. **Inactivity.** The body requires a certain amount of physical activity to remain in optimum condition. Moderate exercise every day (such as walking, swimming, etc.) stimulates the circulation, improves muscle tone, reduces stress and generally makes one feel better.

6. **High blood pressure--hypertension.** When the arteries become narrower due to atherosclerosis, the heart (pump) must work harder to push the blood through these narrower openings, thus the blood pressure increases. The constant trauma of high blood pressure damages the inner layer of the artery wall making it more permeable to lipid penetration and plaque. High blood pressure has sometimes been called the "silent killer" as there are no early warning signs. If left untreated, high blood pressure may lead to a heart attack or stroke. The incidence of high blood pressure



is currently higher in men than women.

Uncontrollable risk factors.

These are factors over which you have little or no control in your life but they do have an influence on the development of peripheral vascular disease.

1. **Diabetes.** If you are a diabetic, you are at greater risk for developing atherosclerosis than a non-diabetic, therefore it is of utmost importance for you to maintain good control of the diabetes. Ensure you eat the proper diet, exercise moderately, take insulin or oral medication if prescribed and monitor your blood glucose level regularly.

2. **Age.** We have already mentioned that atherosclerosis begins at an early age and is a natural process of aging, therefore, the older you are the more at risk you are for the development of peripheral vascular disease.

3. **Family history.** If there is a family history of peripheral vascular disease then this will increase the likelihood of you developing the disease process.

4. **Sex.** Currently the male sex is at higher risk for developing peripheral vascular disease than females up to the age of menopause. It is generally thought that female hormones play a protective role prior to menopause. However, lifestyle changes for younger women (more women in high stress jobs, smoking etc.) seen to be the reason for an increase in the number of younger women with peripheral vascular disease.

### Signs and Symptoms

Using the sign and symptom chart (Appendix IX), review the signs and symptoms of peripheral vascular disease.

1. **Skin temperature changes in the affected area.** The affected limb may feel cold to touch due to reduced blood flow in the area.

2. **Differences in size and color of lower limbs.** The affected limb may sometimes be smaller in size than an unaffected limb. It may have a whitish appearance (with severe ischemia) versus a normal pinkish color.

3. **Altered arterial pulsations.** It is difficult to feel an arterial pulse in the affected area. It sometimes requires a special piece of equipment called a "doppler" to determine if a pulse is present. A doppler amplifies the sound of the pulsation thus making it easier to hear.

4. **Intermittent claudication.** This is a term used to describe the symptom in which the patient experiences pain or discomfort in muscles after exercise but is relieved by rest.

5. **Pain in affected area even at rest.**

6. **Tingling and numbness of toes, soles of foot and heels of affected limb.**

7. **Necrosis following mild trauma.** Because circulation to the affected area is poor then even a slight injury may be hard to heal, especially in diabetics.

8. **Sudden occlusion of a fairly large artery** will cause numbness, marked coldness and chalk white appearance in part

of limb affected, especially with an embolus or acute thrombus.

### Diagnostic Procedures

The attending physician may order the following procedure.

1. **Angiography - Arteriogram.** This procedure is routinely done on an outpatient basis. It is an x-ray visualization of the internal anatomy of the heart and blood vessels following the intravascular introduction of radiopaque contrast medium (Hamilton, 1983, p. 54). The procedure allows the attending physician to locate and assess the extent of occlusion in the affected area. A catheter is inserted by the doctor into an artery (usually the femoral but occasionally the brachial or as a trans lumbar) and threaded through the vessel to the Aorta and the contrast medium (dye) is injected. After the procedure, the patient is monitored for signs of bleeding, vital signs are checked frequently and bed rest is required for a number of hours.

MODULE TWO  
THE PRE-OPERATIVE PROCESS

## **Module Two**

### **The Pre-Operative Process**

#### **Goal**

This module is designed to inform the patient and where appropriate, family members of the indications for surgery, preparation for surgery and the surgical procedure itself.

#### **Learner Objectives**

Following participation in the module on the pre-operative process, participants will be able to describe in lay terms:

1. The indications for this particular surgical procedure.
2. The procedures to be completed prior to surgery and the rationale for such procedures.
3. The operative procedure.

#### **Surgical Intervention**

If the disease process has progressed to the stage where the patient is in continuous discomfort and in danger of losing a limb, then surgery is required to relieve the obstruction. Most Femoral Popliteal Bypass surgery is done to relieve claudication. The most common procedure is a bypass of the obstructed segment using an autogenous (the patient's own graft, e.g. vein) or a prosthetic material such as gortex.

Use the diagram showing the surgical area with bypass graft (Appendix X) to show the patient the specific area of bypass.

### Pre-Operative Care

The following points should be covered with the patient:

1. Pre-operative blood tests, chest x-ray and urinalysis will be done--usually prior to the patient being admitted to the floor. This is routine and gives the surgeon and anesthesiologist necessary patient health status information required prior to surgery.

2. An E.K.G. (electrocardiogram) is done routinely for patients having Femoral Popliteal Bypass surgery. An E.K.G. is a device used to record the electrical activity of the heart muscle to detect abnormal transmission of the cardiac impulse through the conductive tissues of the muscle. It allows diagnosis of specific heart abnormalities. Leads are attached to certain parts of the patient's chest, arms and legs, usually with adhesive jelly that promotes transmission of the electrical impulse to the recording device. The patient will be asked to lie quietly on his/her back during the entire procedure. It is a non-invasive painless procedure.

3. Visits by various health care professionals. The patient should be told he/she will be visited by several health care professionals prior to their surgery. These

professionals may include the following:

- (a) The surgeon and his Resident and Intern. The purpose of their visit will be to explain the surgical procedures to the patient ensuring the patient understands the process. The patient will be asked to sign a surgical consent form thus giving permission for the specific surgical procedure to be performed.
- (b) Anesthesiologist will visit and examine the patient. He/she will explain their role in giving the anaesthesia, the pre-operative medication and what the patient should expect pre-operatively and post-operatively.
- (c) The Recovery Room Nurse will explain the immediate post-operative period in the Recovery Room, the fact that the patient will have an intravenous infusion, vital signs monitored frequently, incisional areas checked, oxygen mask may be required, deep breathing, etc.
- (d) The physiotherapist will explain the importance of deep breathing following surgery. He/she will demonstrate the use of the incentive spirometer for this purpose. Specific movements to maintain muscle strength and improve circulation will be outlined, as well as the importance of not bending the grafted area.
- (e) The staff nurse will prepare the patient for surgery
  - administering an enema if ordered
  - the operative area may need to be shaved
  - ensuring the patient has a bath and has voided

- checking the patient's valuables and locking them in a safe place
- ensuring the patient has removed false teeth, makeup and jewellery
- explain to the patient the importance of not eating or drinking after midnight the day prior to surgery
- administering a sedative the night prior to surgery (if ordered) and the immediate pre-operative medication
- explaining to the patient the effects the pre-operative medication will have and why it is important to keep the siderails up on the bed following medication.

The nurse should also explain that the patient may spend a short period of time in the Intensive Care Unit (ICU) immediately following surgery if deemed necessary by the surgeon. Prepare the patient for the machinery etc. which is part of the ICU experience. Emphasize the fact that nurses can give closer attention and monitoring in ICU as there are fewer patients per nurse and when the patient is stable they will be returned to their original floor. If the surgeon does not feel the patient needs to go to ICU, then they will be returned to their floor from the Recovery Room. The nurse should also tell the family of an appropriate time and area to call following surgery.



(f) Clergy and/or Pastoral Care Worker will visit if the patient wishes.

(g) If there is a need a social worker may be asked to visit.

**MODULE THREE**  
**POST-OPERATIVE CARE**

### **Module Three**

#### **Post-Operative Process**

##### **Goal**

To inform the patient and where applicable, family members of procedures routinely followed post-operatively for Femoral Popliteal Bypass surgery.

##### **Learner Objectives**

Following participation in the module on the post-operative process participants will be able to describe in lay terms:

1. Rationale for post-operative monitoring of vital signs and checking of circulation, sensation and temperature in the affected limb.
2. The use of a doppler instrument.
3. Post-operative positioning and exercise.
4. Pain control.
5. The importance of deep breathing and coughing.
6. The use of intravenous fluids and reason for recording output.

##### **Post-Operative Care**

Explain the following to the patient:

1. Vital signs will be taken frequently.
2. Color, temperature, sensation and quality of pulses

in the extremity will be checked frequently (at least for the first eight hours). Explain why you are checking.

3. Initially, vasospasm may make it difficult or impossible to palpate the pedal pulse. In this case, a doppler machine may be used. It amplifies the pulse sound, thus making it easier to hear. Explain this to the patient.

4. The patient will be given medication for the relief of pain and discomfort.

5. They will have an intravenous (IV) infusion in place to supply nutrients until they are able to take food by mouth. the IV site will be checked frequently by the nurse. If the patient should notice a redness, swelling or any discomfort at the IV site, a nurse should be notified.

6. The patient should be told that the first time he/she voids immediately following surgery, the nurse will collect and measure the urine to ensure their kidneys are functioning adequately and that they are not retaining urine.

7. They will have dressings over the incision site(s). These will be checked and changed by the nurse periodically. If they should notice the dressing is loose or wet, a nurse should be notified.

8. They will be encouraged to cough and deep breathe frequently. This is done to avoid lung congestion post-surgery. An incentive spirometer is a piece of equipment used to assist them with deep breathing. Show the patient how to use the incentive spirometer.

9. They will have some lower leg swelling post-operatively which may last for up to approximately two months.

**MODULE FOUR**  
**PREPARATION FOR DISCHARGE**

**Module Four**  
**Preparation for Discharge**

**Goal**

To inform the patient and family of the health care maintenance program which should be followed at home.

**Learner Objectives**

Following involvement in the module on preparation for discharge, the patient and/or family should be able to:

1. Describe the prescribed activity program, including the restrictions.
2. Describe the correct dietary regime to follow.
3. Identify potential complications and the actions to take should they arise.
4. Describe the importance of compliance with the medication and treatment regime.
5. Describe their specific medication regime. State dosage, action frequency of taking and side effects of prescribed medication.

**Discharge Instructions**

**Medication.**

1. Follow the medication program outlined for you on your medication summary sheet.
2. If you are experiencing some discomfort in the

operative area, your doctor may prescribe medication to be taken as needed. Be sure to take medication only as directed.

#### Diet.

1. Follow the diet prescribed for you by your doctor and the Dietitian. Avoid foods high in cholesterol, sodium and fat (e.g. butter, eggs, salt meat, etc.). The Dietitian will discuss with you other important nutrition factors to be concerned with.

#### Activity.

1. Walking is the best exercise. You should walk as frequently as you can and are able.
2. You have incisions in the groin and knee area, therefore you should avoid pulling on the incisions.
3. Do not drive a car for at least two to three weeks after surgery. This will avoid strain on the incision area from sitting as well as pressing on the brake or gas peddle. Your reflexes will also be slower than normal.

#### Personal hygiene.

1. You may have a daily shower. Ensure the incision area is completely clean and dry after the shower. Gently pat the incision area dry.
2. You are more prone to foot infection due to some impairment in your circulatory system. It is very important



that you take special care of your feet and legs. Keep your feet clean and dry. Use a cream if your feet are very dry and tend to crack. Cut your toenails straight across with nail scissors or clippers. Care must be taken to avoid getting ingrown toenails. If problems do arise, seek professional help as soon as possible.

3. Avoid wearing socks or stockings which may tend to cut off circulation (e.g. knee high nylons, socks with tight elastic).

4. If your legs continue to swell wear prescribed tensor stockings or tensor bandages.

5. If you are one of the patients who has been discharged from the hospital with sutures still in place, arrangements will be made to have these sutures removed as an outpatient.

#### Follow-up instructions.

You will be given specific instructions by the nurse and doctor before you go home. Normally you will be given an appointment to return to the outpatient surgical clinic to see your surgeon. If any problems arise after you go home, contact your doctor's office.

Appendix I  
Questionnaire

We are attempting to evaluate the effectiveness of the Femoral Popliteal Bypass Patient Education Program. Therefore, we would greatly appreciate your participation in completing this questionnaire. It will assist us in identifying areas requiring change and improvement.

Thank you.

Sex:        M ☐                      F ☐

Age:        \_\_\_\_\_

Level of education attained: \_\_\_\_\_

Previous hospitalization: Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, why were you previously hospitalized?

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**Femoral Popliteal Bypass Patient Education Program****Questionnaire**

Please circle the small letters for all statements you feel to be true.

1.   **The main function of the heart is to**
  - (a)   supply oxygen to the body tissues
  - (b)   pump blood to all parts of the body
2.   **Arteries carry blood**
  - (a)   away from the heart
  - (b)   towards (back to) the heart
3.   **Veins carry blood**
  - (a)   away from the heart
  - (b)   towards (back to) the heart
4.   **The main function of the lungs is**
  - (a)   to supply the heart with water
  - (b)   to allow for the exchange of oxygen and carbon dioxide in the blood
5.   **Atherosclerosis is**
  - (a)   a build-up of plaque on the inside wall of the artery
  - (b)   a disease of the blood
  - (c)   a rare bone disease
6.   **Peripheral vascular disease refers to**
  - (a)   enlarged veins
  - (b)   atherosclerosis in the extremities (leg and feet), which is causing too little blood flow to the area

7. The signs and symptoms of peripheral vascular disease may include:
- (a) cold feet and hands
  - (b) vomiting
  - (c) pain in the affected limbs even at rest
  - (d) diarrhea
  - (e) tingling and numbness of toes
  - (f) a difference in the size and color of the affected limb
  - (g) weight gain
  - (h) an area on the affected limb which will not heal following mild trauma
8. Which of the following lifestyle factors contribute to the development of Peripheral Vascular Disease?
- (a) lifting heavy objects
  - (b) walking a mile a day
  - (c) smoking
  - (d) being overweight
  - (e) eating too many fatty foods
  - (f) swimming
  - (g) too much stress
  - (h) not enough exercise
  - (i) having high blood pressure
  - (j) family history of Peripheral Vascular Disease

9. List the medication you are on and give the following information:

<u>Medication</u>	<u>Dosage (How Much)</u>	<u>Action Why Taking</u>	<u>Time When Taking</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

#### Pre-Operative Process

10. Please circle the procedures you would expect to be carried out before your surgery.
- (a) routine blood and urine tests
  - (b) diet counselling
  - (c) E.K.G. (heart tracing - electrocardiogram)
  - (d) chest x-ray
  - (e) arteriogram
  - (f) discharge instructions
  - (g) an enema
  - (h) shaving of the area where surgery is to be performed
11. The type of surgery you will be having is called
- (a) cholecystectomy
  - (b) amputation
  - (c) femoral popliteal bypass

12. **This type of surgery will involve**
  - (a) removing the obstructed area in the bowel
  - (b) bypassing the obstructed area in the leg with a graft
  - (c) removing the appendix
13. **Generally, eating or drinking is not allowed**
  - (a) all day prior to surgery
  - (b) after lunch the day before surgery
  - (c) after midnight the day before surgery
14. **The medication given just before your surgery**
  - (a) helps dry up excess secretions in your mouth and throat
  - (b) relaxes you
  - (c) keeps you from becoming nauseated
  - (d) relieves pain
15. **The Recovery Room is**
  - (a) a room in close proximity to the x-ray department
  - (b) a room adjoining the operating room where patients go immediately after surgery
  - (c) a room patients go after having a blood test
16. **The Intensive Care Unit (I.C.U.)**
  - (a) is a room where electrocardiograms are done
  - (b) is a room where breathing tests are done
  - (c) is a special unit where patients go if they require constant attention and close monitoring

17. Intravenous therapy refers to
- (a) administration of fluids via a special set-up with a needle inserted in a vein
  - (b) a special diet ordered by the doctor
18. It is important to practice deep breathing and coughing following surgery in order to
- (a) encourage movement
  - (b) to prevent congestion in the lungs
  - (c) to prevent vomiting
19. It is important to follow instructions re exercise given by the physiotherapist, nurse and physician following surgery because
- (a) it improves circulation and helps prevent complications
  - (b) it assists the healing process

#### Post-Operative Care

20. Circle the things you would expect to happen immediately following surgery.
- (a) to be able to eat solid food
  - (b) the nurse will check your temperature, blood pressure and pulse frequently
  - (c) you will be able to go to the bathroom immediately upon returning to your room
  - (d) the nurse will check incision sites, color, temperature, sensation and quality of pulses in the

- extremity (leg)
- (e) muscular spasms in the operative area
  - (f) to be given medication to alleviate pain

**Preparation for Discharge**

- 21. Foods high in saturated fat (cholesterol) include**
- (a) lettuce                      (d) chicken
  - (b) butter                      (e) steak
  - (c) egg yolk                      (f) codfish
- 22. Things you should avoid for awhile following surgery**
- (a) kneeling
  - (b) standing
  - (c) driving a car
  - (d) having a shower
  - (e) wearing socks with tight elastic



## Appendix II

Femoral Popliteal Bypass Patient Education ProgramParticipation Consent Form

I, \_\_\_\_\_ agree to participate in the Femoral Popliteal Bypass Patient Education Program. The Instructor has explained the program content and how I will be expected to participate.

Date:

\_\_\_\_\_

Patient's Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_

Witness Signature:

\_\_\_\_\_

## Appendix III

Patient Satisfaction Questionnaire

We would like to know how you felt about the Femoral Popliteal Bypass Patient Education Program. We have designed an evaluation questionnaire which we hope you will complete and return to us as soon as possible in the self-addressed stamped envelope. Please feel free to say exactly what you felt about each area. Your response will assist us in improving the program for other patients.

Thank you.

Sex:        M ☐        F ☐

Age:        \_\_\_\_\_

Femoral Popliteal Bypass Patient Education ProgramEvaluation Questionnaire

Please circle the following.

- Key:        1        -   Poorly  
              2        -   Fairly Well  
              3        -   Well  
              4        -   Very Well

1.    How well do you feel you understand the following topics:

- |  |               |
|--|---------------|
| (a)    the parts and function of the<br>circulatory system?                        | 1   2   3   4 |
| (b)    atherosclerosis?  | 1   2   3   4 |
| (c)    peripheral vascular disease?  | 1   2   3   4 |
| (d)    lifestyle risk factors related<br>to atherosclerosis?                       | 1   2   3   4 |
| (e)    foods which are high in<br>cholesterol?                                     | 1   2   3   4 |
| (f)    diagnostic tests used to<br>determine the extent of the<br>disease process? | 1   2   3   4 |
| (g)    what happens before surgery?  | 1   2   3   4 |
| (h)    the bypass surgical procedure<br>used in your case?                         | 1   2   3   4 |
| (i)    what happens after surgery?   | 1   2   3   4 |
| (j)    rules to follow at home?  | 1   2   3   4 |

2. Did you have any unanswered questions about your surgery or disease process when you left the hospital?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, what were the questions?

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3. Do you feel the teaching program was beneficial to you?

Yes \_\_\_\_\_ No \_\_\_\_\_

If no, why? \_\_\_\_\_

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4. Did you feel comfortable in asking questions?

Yes \_\_\_\_\_ No \_\_\_\_\_

If no, why? \_\_\_\_\_

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5. How would you rate the teaching performance of the instructor?

Poor \_\_\_\_\_ Very Good \_\_\_\_\_

Fair \_\_\_\_\_ Excellent \_\_\_\_\_

Good \_\_\_\_\_

6. Do you feel the information given to you in the program made you feel less fearful and anxious?

Yes \_\_\_\_\_ No \_\_\_\_\_

If no, why? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. Overall, how would you rate the teaching program?

Poor \_\_\_\_\_ Very Good \_\_\_\_\_

Fair \_\_\_\_\_ Excellent \_\_\_\_\_

Good \_\_\_\_\_

8. Please feel free to offer any comments or suggestions for the program.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Thank you for taking the time to complete  
and return this questionnaire.

## Appendix IV

Diagram of the Heart

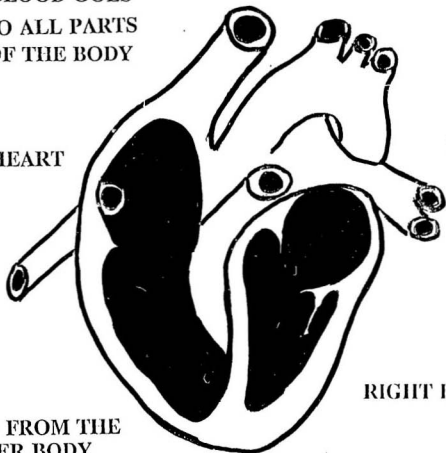
BLOOD GOES  
TO ALL PARTS  
OF THE BODY

LEFT HEART

TO THE  
LUNG

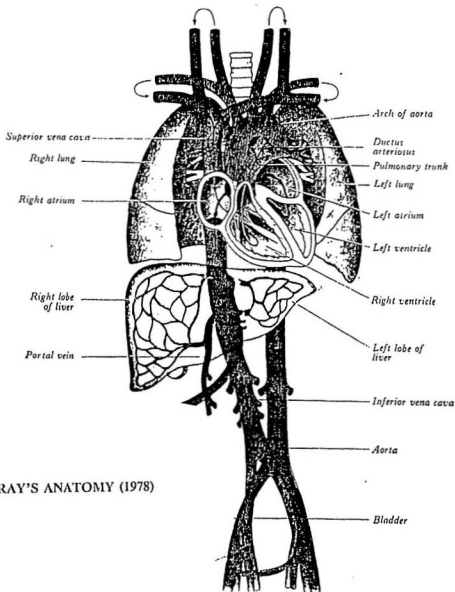
BLOOD FROM THE  
LOWER BODY

RIGHT HEART



THE HEART

## Appendix V

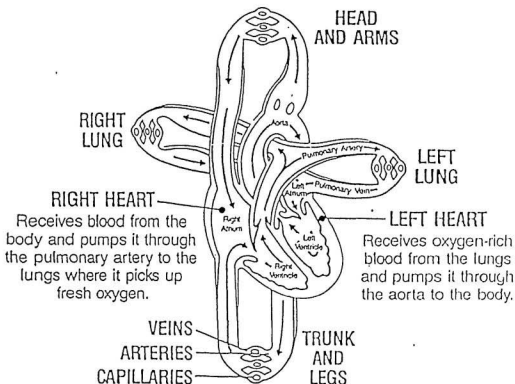
Diagram of the Circulatory System

GRAY'S ANATOMY (1978)

## Appendix VI

Diagram of Circulatory System

## THE HEART AND CIRCULATORY SYSTEM

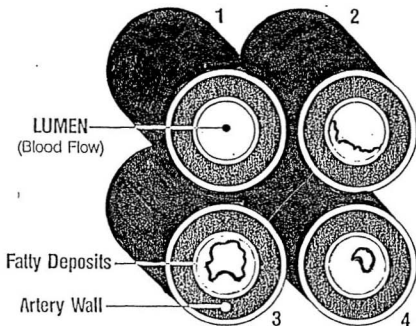




## Appendix VII

Diagram of Atherosclerosis

## ATHEROSCLEROSIS



BASIC RESCUER MANUAL  
HEART AND STROKE FOUNDATION  
OF CANADA (1987)

**Appendix VIII**  
**Risk Factor Chart**

**Controllable Factors**

1. High cholesterol
2. Cigarette smoking
3. High levels of stress
4. Obesity
5. Hypertension - high blood pressure
6. Inactivity

**Uncontrollable Factors**

1. Family history
2. Diabetes
3. Age
4. Sex

**Appendix IX**  
**Signs and Symptoms Chart**

1. Skin temperature changes in the affected area - cold feet and hands.
2. Differences in size and color of lower limbs.
3. Altered arterial pulsations.
4. Intermittent claudication - pain brought on by walking.
5. Pain in affected part even at rest.
6. Tingling and numbness of toes.
7. Necrosis following milk trauma.
8. Occlusion of a fairly large artery will cause numbness, marked coldness and chalk white appearance in part of limb affected.

**Appendix X****Femoral Popliteal Bypass Patient Education Program****Outline**

1. Questionnaire
2. Module One - Peripheral Vascular Disease Process
3. Module Two - The Pre-Operative Process
4. Module Three - Post-Operative Process
5. Module Four - Preparation for Discharge

**APPENDIX B**  
**PATIENT TEACHING PROGRAM FORMAT**

**Appendix B****Patient Teaching Program Format**

1. Title of Program
2. Table of Contents
3.
  - i) Purpose
  - ii) Philosophy
  - iii) Objectives of Program
  - iv) Length and Frequency of Program
4. Referral Mechanism to Program
5. Pre-Test (where applicable)
6.
  - i) Formal Written program
  - ii) Reference Literature
7. Methodology Used for Teaching; e.g., Lecture, Demonstration, Discussion, etc.
8. Plans for Learner Involvement; e.g., Questions, Return Demonstration, etc.
9. Resource Material Required to Teach Program; e.g., Audio-Visual Aids, Flip Charts, Handouts, Human Resources
10. Post-Test (where applicable)
11. Evaluation of Program
  - (a) by participants
  - (b) by instructors
12. Documenting
  - i) Statistics, Record Keeping; e.g., Attendance
  - ii) Record of Patient Teaching Done to be Placed on Patient's Chart

(Developed by the Patient Education Committee, St. Clare's Mercy Hospital)

APPENDIX C  
LETTER OF APPROVAL

*Mercy Above All*

St. Clare's Mercy Hospital  
Lebanon Road  
St. John's, Newfoundland  
Canada A1C 5B8  
Phone (709) 778-3111  
Fax (709) 738-0080

6 May 1991

Mrs. Marion Pratt  
P.O. Box 42  
Portugal Cove, Newfoundland  
A0A 3K0

Dear Mrs. Pratt:

At its meeting on Tuesday, April 23, 1991, the Medical Advisory Committee of St. Clare's Mercy Hospital formally approved your application re The Femoral Popliteal Patient Education Program.

Yours Sincerely,

Sean Conroy, M.D.  
Medical Director

SC/jec  
cc: Dr. D.W. Ingram



**APPENDIX D**  
**PRE- AND POST-TEST QUESTIONNAIRE**

**Appendix D****Pre- and Post-Test Questionnaire**

We are attempting to evaluate the effectiveness of the Femoral Popliteal Bypass Patient Education Program. Therefore, we would greatly appreciate your participation in completing this questionnaire. It will assist us in identifying areas requiring change and improvement.

Thank you.

Sex:        M ☐        F ☐

Age:        \_\_\_\_\_

Level of education attained: \_\_\_\_\_

Previous hospitalization: Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, why were you previously hospitalized?

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**Femoral Popliteal Bypass Patient Education Program**  
**Questionnaire**

Please circle the small letters for all statements you feel to be true.

1. **The main function of the heart is to**
  - (a) supply oxygen to the body tissues
  - (b) pump blood to all parts of the body
2. **Arteries carry blood**
  - (a) away from the heart
  - (b) towards (back to) the heart
3. **Veins carry blood**
  - (a) away from the heart
  - (b) towards (back to) the heart
4. **The main function of the lungs is**
  - (a) to supply the heart with water
  - (b) to allow for the exchange of oxygen and carbon dioxide in the blood
5. **Atherosclerosis is**
  - (a) a build-up of plaque on the inside wall of the artery
  - (b) a disease of the blood
  - (c) a rare bone disease
6. **Peripheral vascular disease refers to**
  - (a) enlarged veins
  - (b) atherosclerosis in the extremities (leg and feet), which is causing too little blood flow to the area
7. **The signs and symptoms of peripheral vascular disease may include:**
  - (a) cold feet and hands
  - (b) vomiting
  - (c) pain in the affected limbs even at rest

- (d) diarrhea
- (e) tingling and numbness of toes
- (f) a difference in the size and color of the affected limb
- (g) weight gain
- (h) an area on the affected limb which will not heal following mild trauma

**8. Which of the following lifestyle factors contribute to the development of Peripheral Vascular Disease?**

- (a) lifting heavy objects
- (b) walking a mile a day
- (c) smoking
- (d) being overweight
- (e) eating too many fatty foods
- (f) swimming
- (g) too much stress
- (h) not enough exercise
- (i) having high blood pressure
- (j) family history of Peripheral Vascular Disease

9. List the medication you are on and give the following information:

<u>Medication</u>	<u>Dosage (How Much)</u>	<u>Action Why Taking</u>	<u>Time When Taking</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Pre-Operative Process**

10. Please circle the procedures you would expect to be carried out before your surgery.

- (a) routine blood and urine tests
- (b) diet counselling
- (c) E.K.G. (heart tracing - electrocardiogram)
- (d) chest x-ray
- (e) arteriogram
- (f) discharge instructions
- (g) an enema
- (h) shaving of the area where surgery is to be performed

11. The type of surgery you will be having is called

- (a) cholecystectomy
- (b) amputation
- (c) femoral popliteal bypass

12. **This type of surgery will involve**
  - (a) removing the obstructed area in the bowel
  - (b) bypassing the obstructed area in the leg with a graft
  - (c) removing the appendix
13. **Generally, eating or drinking is not allowed**
  - (a) all day prior to surgery
  - (b) after lunch the day before surgery
  - (c) after midnight the day before surgery
14. **The medication given just before your surgery**
  - (a) helps dry up excess secretions in your mouth and throat
  - (b) relaxes you
  - (c) keeps you from becoming nauseated
  - (d) relieves pain
15. **The Recovery Room is**
  - (a) a room in close proximity to the x-ray department
  - (b) a room adjoining the operating room where patients go immediately after surgery
  - (c) a room patients go after having a blood test
16. **The Intensive Care Unit (I.C.U.)**
  - (a) is a room where electrocardiograms are done
  - (b) is a room where breathing tests are done
  - (c) is a special unit where patients go if they require constant attention and close monitoring

17. Intravenous therapy refers to
- (a) administration of fluids via a special set-up with a needle inserted in a vein
  - (b) a special diet ordered by the doctor
18. It is important to practice deep breathing and coughing following surgery in order to
- (a) encourage movement
  - (b) to prevent congestion in the lungs
  - (c) to prevent vomiting
19. It is important to follow instructions re exercise given by the physiotherapist, nurse and physician following surgery because
- (a) it improves circulation and helps prevent complications
  - (b) it assists the healing process

**Post-Operative Care**

20. Circle the things you would expect to happen immediately following surgery.
- (a) to be able to eat solid food
  - (b) the nurse will check your temperature, blood pressure and pulse frequently
  - (c) you will be able to go to the bathroom immediately upon returning to your room
  - (d) the nurse will check incision sites, color, temperature, sensation and quality of pulses in the

extremity (leg)

- (e) muscular spasms in the operative area
- (f) to be given medication to alleviate pain

**Preparation for Discharge**

**21. Foods high in saturated fat (cholesterol) include**

- |              |             |
|--------------|-------------|
| (a) lettuce  | (d) chicken |
| (b) butter   | (e) steak   |
| (c) egg yolk | (f) codfish |

**22. Things you should avoid for awhile following surgery**

- (a) kneeling
- (b) standing
- (c) driving a car
- (d) having a shower
- (e) wearing socks with tight elastic



APPENDIX E

EXPERIMENTAL AND CONTROL GROUP RESPONSES

PER QUESTION ON THE PRE- AND POST-TEST QUESTIONNAIRE

**Experimental and Control Group Responses****Per Question on the Pre- and Post-Test Questionnaire**

	Experimental N = 7				Control N = 8			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
Questions	C	I	C	I	C	I	C	I
1. one possible correct answer (1 point)	6	1	7	0	8	0	8	0
2. one possible correct answer (1 point)	5	2	5	2	4	4	7	1
3. one possible correct answer (1 point)	6	1	7	0	5	3	7	1
4. one possible correct answer (1 point)	6	1	7	0	8	0	8	0
5. one possible correct answer (1 point)	5	2	7	0	7	1	7	1
6. one possible correct answer (1 point)	5	2	6	1	7	1	8	0
7. five possible correct answers (5 points)	29	6	31	4	36	4	33	7
8. seven possible correct answers (7 points)	42	7	45	4	43	13	46	10
9. deleted	-	-	-	-	-	-	-	-
10. six possible correct responses (6 points)	34	8	33	9	38	10	37	11

Questions	Experimental N = 7				Control N = 8			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	C	I	C	I	C	I	C	I
11. one possible correct response (1 point)	6	1	5	2	7	1	8	0
12. one possible correct response (1 point)	7	0	7	0	8	0	8	0
13. one possible correct response (1 point)	6	1	7	0	8	0	8	0
14. two possible correct responses (2 points)	8	6	4	10	8	8	10	6
15. one possible correct response (1 point)	7	0	7	0	8	0	8	0
16. one possible correct response (1 point)	7	0	6	1	7	1	8	0
17. one possible correct response (1 point)	7	0	4	3	6	2	7	1
18. one possible correct response (1 point)	4	3	6	1	7	1	8	0
19. two possible correct responses (2 points)	9	5	9	5	11	5	12	4
20. four possible correct responses (4 points)	21	7	21	7	24	8	24	8

	Experimental N = 7				Control N = 8			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
Questions	C	I	C	I	C	I	C	I
21. three possible correct responses (3 points)	6	15	13	8	15	9	15	9
22. three possible correct responses (3 points)	10	11	20	1	20	4	18	6

## KEY:

Experimental	=	Experimental Group
Control	=	Control Group
Pre-Test	=	Pre-Test Results
Post-Test	=	Post-Test Results
C	=	Correct Responses
I	=	Incorrect Responses

**APPENDIX F**  
**FREQUENCY VARIABLES COMPARED TO PRE- AND POST-TEST**  
**RESULTS PER EXPERIMENTAL AND CONTROL GROUPS**

**Frequency Variables Compared to Pre- and Post-Test Results Per Experimental and Control Groups**

Group	Education	Smoking	Gender	Previous Hospitalization	Exercise Level	Age	Pre-Test Score	Post-Test Score
Experimental N = 7	Grade 11	Yes	Male	Yes	A Lot	44	41	41
	Grade 9	No	Male	Yes	Very Little	51	41	40
	Grade 11	No	Male	Yes	Very Little	52	34	42
	No schooling	No	Male	Yes	Moderate	62	34	42
	No schooling	Yes	Male	Yes	Very Little	67	24	36
	Grade 6	Yes	Male	Yes	Very Little	72	25	29
	Grade 9	Yes	Female	Yes	Very Little	72	34	40
Mean							33.2	38.6
Control N = 8	Grade 11	Yes	Female	Yes	Very Little	52	35	35
	Grade 9	No	Male	Yes	Very Little	58	37	40
	Grade 11	Yes	Male	Yes	Very Little	61	40	40
	Grade 11	Yes	Female	Yes	Moderate	65	35	37
	Grade 9	Yes	Male	No	Very Little	66	28	39
	Grade 10	No	Male	Yes	Very Little	73	35	30
	Grade 8	Yes	Male	Yes	Moderate	74	32	34
	Grade 9	No	Male	Yes	Moderate	75	36	40
Mean							34.8	36.9

**APPENDIX G**  
**PATIENT SATISFACTION QUESTIONNAIRE**

## Appendix G

Patient Satisfaction Questionnaire

We would like to know how you felt about the Femoral Popliteal Bypass Patient Education Program. We have designed an evaluation questionnaire which we hope you will complete and return to us as soon as possible in the self-addressed stamped envelope. Please feel free to say exactly what you felt about each area. Your response will assist us in improving the program for other patients.

Thank you.

Sex:        M ☐        F ☐

Age:        \_\_\_\_\_



Femoral Popliteal Bypass Patient Education ProgramEvaluation Questionnaire

Please circle the following.

- Key:
- |   |   |             |
|---|---|-------------|
| 1 | - | Poorly      |
| 2 | - | Fairly Well |
| 3 | - | Well        |
| 4 | - | Very Well   |

1. How well do you feel you understand the following topics:

- |     |   |   |   |   |   |
|-----|---|---|---|---|---|
| (a) | the parts and function of the circulatory system?                     | 1 | 2 | 3 | 4 |
| (b) | atherosclerosis?  | 1 | 2 | 3 | 4 |
| (c) | peripheral vascular disease?  | 1 | 2 | 3 | 4 |
| (d) | lifestyle risk factors related to atherosclerosis?                    | 1 | 2 | 3 | 4 |
| (e) | foods which are high in cholesterol?                                  | 1 | 2 | 3 | 4 |
| (f) | diagnostic tests used to determine the extent of the disease process? | 1 | 2 | 3 | 4 |
| (g) | what happens before surgery?  | 1 | 2 | 3 | 4 |
| (h) | the bypass surgical procedure used in your case?                      | 1 | 2 | 3 | 4 |
| (i) | what happens after surgery?   | 1 | 2 | 3 | 4 |
| (j) | rules to follow at home?  | 1 | 2 | 3 | 4 |

2. Did you have any unanswered questions about your surgery or disease process when you left the hospital?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, what were the questions?

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3. Do you feel the teaching program was beneficial to you?

Yes \_\_\_\_\_ No \_\_\_\_\_

If no, why? \_\_\_\_\_

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4. Did you feel comfortable in asking questions?

Yes \_\_\_\_\_ No \_\_\_\_\_

If no, why? \_\_\_\_\_

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5. How would you rate the teaching performance of the instructor?

Poor \_\_\_\_\_ Very Good \_\_\_\_\_

Fair \_\_\_\_\_ Excellent \_\_\_\_\_

Good \_\_\_\_\_

6. Do you feel the information given to you in the program made you feel less fearful and anxious?

Yes \_\_\_\_\_ No \_\_\_\_\_

If no, why? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

7. Overall, how would you rate the teaching program?

Poor \_\_\_\_\_ Very Good \_\_\_\_\_

Fair \_\_\_\_\_ Excellent \_\_\_\_\_

Good \_\_\_\_\_

8. Please feel free to offer any comments or suggestions for the program.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Thank you for taking the time to complete  
and return this questionnaire.







